Crivella West
Production Format Standard

CW PFS/100 v003 (02/02/2011)

The **Crivella West Production Format Standard** contains pragmatic recommendations relating to the form and format of Electronically Stored Information ("ESI") and Physically Stored Information ("PSI"). Application of the standard is intended for consideration by all parties to litigation to foster productive negotiations of discovery production agreements and proposed Agreed Orders.

The Standard consists of best methods and practices in the production of discovery materials and is a product of Crivella West's thirteen years' experience consulting with and supporting attorneys litigating some of the largest and most complex litigations in the United States and other countries. Crivella West freely offers the Standard to the legal community for the purpose of fostering a fair and comprehensive approach to current discovery practices as well as detailed technical specifications as they relate to Electronically Stored Information.

This Standard is periodically refined and updated in keeping with the constant evolution of technology and ESI discovery practice. Crivella West invites comments and suggestions that will improve this Standard to address new technologies, ongoing legal obligations and practical considerations.

CRIVELLA WEST

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CRIVELLA WEST PRODUCTION FORMAT STANDARD[1]

I. OBJECTIVE

One of the critical milestones in the initiation of discovery occurs during the parties' preliminary FRCP Rule 26(f) "Meet and Confer" where parties discuss the types of documents and materials that will be discoverable during the litigation. Initial meetings should be exploratory in nature, and Crivella West's recommendations are designed to assist parties with the planning and execution of their discovery practice.[2] After identifying the types of discoverable material specific to a case, it is critical to ensure that such materials are collected, processed and produced in a manner that provides the parties with the information and data needed to understand and analyze the materials to prepare their claims and/or defenses and make their best case. To that end, we have prepared The Crivella West Production Format Standard (the "Standard" or "Specification") incorporating current recommendations for best methods and practices in the production of discovery materials. By agreeing to use this Specification, the parties can secure discoverable material and come to an understanding with respect to the manner in which records were prepared and how they were used in the course of business.

II. GENERAL PROVISIONS

The parties will prepare their discovery disclosures and production of documents in accordance with the agreed-upon Specifications set forth below.

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[1] Copying of this Standard by attorneys representing litigants for use as a discovery protocol is permitted if attribution is given to Crivella West Incorporated ("Crivella West"). No other use is authorized, unless preapproved in writing by Crivella West.

[2] See "Crivella West's Recommendations to Investigate Alternate Sources of ESI".

A. Prior Productions. In instances where a party is asked to produce physically-stored or electronically-stored information that was previously produced in another case, proceeding or government investigation, the producing party should make best efforts to comply with this Specification. If the producing party believes compliance with this Specification is too burdensome for the instances of previously produced documents, the parties will meet in an attempt to agree upon a mutually acceptable format that provides the discovering party with a production that can be reasonably accessed electronically.

B. Privilege Log. The privilege log shall provide, along with other pertinent information about the document withheld or redacted, all bases for a claim of privilege. As a supplement to the privilege log, the producing party shall also produce a list of the attorneys involved in privileged communications, the firm with which each attorney is affiliated and the email address(es) of the attorney(s). Parties should produce privilege logs in an electronic and easily searchable format.

III. PRODUCTION OF PHYSICALLY STORED INFORMATION

A. TIFFs. Hardcopy paper documents shall be scanned as single page, Group IV compression TIFF images using a print setting of at least 300 dots per inch (DPI). Each image shall have a unique file name, which is the Bates number of the document. Original document orientation shall be maintained (i.e., portrait to portrait and landscape to landscape). Alternatively, hardcopy documents may be produced as PDF images.

B. Metadata Fields. Appendix 2 sets forth the information that shall be produced for physically-stored information and provided in the data load file at the same time that the

TIFF or PDF images and the Optical Character Recognition (OCR)-acquired text files are produced.

C. OCR Acquired Text Files. When subjecting physical documents to an OCR process, the settings of the OCR software shall maximize text quality over process speed. Any settings such as "auto-skewing", "auto-rotation" and the like should be turned on when documents are run through the process.

D. Database Load Files/Cross-Reference Files. Documents shall be provided with (a) a delimited metadata file (.dat, .txt or .csv) and (b) an image load file (.lfp, .opt or .dii), as detailed in Appendix 1.

E. Bates Numbering. All images must be assigned a Bates/control number that shall always: (1) be unique across the entire document production, (2) maintain a constant length (zero/0-padded) across the entire production, (3) contain no special characters or embedded spaces, and (4) be sequential within a given document. If a Bates number or set of Bates numbers is skipped in a production, the producing party will disclose the Bates numbers or ranges in a cover letter accompanying the production.

F. Attachments - Parent-Child Relationships. Parent-child relationships (the association between an attachment and its parent document) shall be preserved. When attachments and embedded files are combined with their parent documents, the "BegAttach" and "EndAttach" fields, listing the unique beginning and ending number for each attachment or embedded document, must be included in the data load file.

G. Unitizing of Documents. In scanning paper documents, distinct documents shall not be merged into a single record, and single documents shall not be split into multiple records

(i.e., paper documents should be logically unitized). In the case of an organized compilation of separate documents – for example, a binder containing several separate documents behind numbered tabs – the document behind each tab should be scanned separately, but the relationship among the documents in the binder should be reflected in proper coding of the beginning and ending document and attachment fields. The parties will make their best efforts to unitize documents correctly.

IV. PRODUCTION OF ELECTRONICALLY STORED INFORMATION

A. Culling. The parties shall meet and confer to disclose and discuss any methodology or technologies being employed by each party that reduce the number of documents to be reviewed in the discovery process. This includes, but is not limited to: search term culling, date-range culling; file-type culling, de-duplication, near de-duplication, cluster mapping, mass coding, automated coding, and email thread suppression. Each party shall disclose the proposed criteria for exclusion of documents. Use of these technologies to reduce the reviewable collections other than as described within this document requires the consent of the receiving parties.

B. System Files. Common system and program files need not be processed, reviewed or produced. The producing party shall keep an inventory of the system files not being produced and the criteria (e.g., non-human readable file, etc.) for not processing the files which shall be disclosed to the receiving party with the first document production and updated with each production. Any system and program files not on the inventory shall be disclosed and, absent an agreement to the contrary, produced to the receiving parties.

C. Email. Email shall be collected from the producing party's email store (e.g., MS Exchange, Lotus Notes) because this is the most reliable source from which to produce and maintain reliable email metadata and structure. Metadata and "header fields" shall be extracted from email messages (mail items). Email messages, meeting notices, calendar items, contacts and tasks shall all be extracted from the email database.

D. De-Duplication. Removal of duplicate documents shall only be done on exact duplicate documents (based on MD5 or SHA-1 hash values at the document level) within a source (custodian). Removal of near-duplicate documents should be avoided because it can result in the removal of pertinent information such as notations and document drafts. De-duplication across the entire collection as opposed to within a source presents unique issues that need to be planned for, such as limiting the ability to prove that a particular document was possessed by a custodian and maintaining the integrity of all sourcing email information. If de-duplication across the entire document collection is agreed to, the receiving parties shall be afforded an opportunity to preview and accept the format of the final load file to ensure that all sourcing and location data are kept and produced as they were in the ordinary course of business.

E. Metadata Fields and Processing. Each of the metadata and coding fields set forth in Appendix 2 that can be extracted from a document shall be produced for that document. The parties are not obligated to populate manually any of the fields in Appendix 2 if such fields cannot be extracted from a document or obtained from a document repository where the document is currently residing, with the exception of the Custodian,

Confidentiality, Document Type and Source File Path fields which shall be populated by the producing party.

F. TIFFs. Single-page Group IV TIFF images shall be provided using at least 300 DPI print setting. Each image shall have a unique file name, which is the Bates number of the document. Original document orientation shall be maintained (i.e., portrait to portrait and landscape to landscape). TIFFs will show any and all text and images which would be visible to the reader using the native software that created the document.

G. Microsoft "Auto" Feature and Macros. Microsoft Word (.doc), Microsoft Excel (.xls) and Microsoft PowerPoint (.ppt) documents and other related versions of the Microsoft Office software should be analyzed for the "auto" features, where documents have an automatically updated date and time in the document, file names, file paths or similar information that when processed would be inaccurate for how the document was used in the ordinary course of business. If "auto date", "auto file name", "auto file path" or similar features are identified, the produced document shall be branded with the words "Auto Date", "Auto File Name", "Auto File Path" or similar words that describe the "auto" feature. Similarly if a document contains a "macro", the document shall be branded with the word "Macro".

H. Embedded Objects. Objects embedded in Microsoft Word and .RTF documents, which have been embedded with the "Display as Icon" feature, will be extracted as separate documents and treated like attachments to the document. Other objects embedded in documents shall be produced as native files maintaining a parent-child relationship.

I. **Compressed files.** Compression file types (*i.e.*, .CAB, .GZ, .TAR, .Z, .ZIP) shall be decompressed in a reiterative manner to ensure that a zip within a zip is decompressed into the lowest possible compression resulting in individual folders and/or files.

J. **Text Files.** For each document, a single text file shall be provided along with the image files and metadata. The text file name shall be the same as the page Bates/control number of the first page of the document. File names shall not have any special characters or embedded spaces. Electronic text must be extracted ***directly from the native electronic file*** unless the document was redacted, an image file, or a physical file. In these instances a text file created using OCR will be produced in lieu of extracted text. See Section III.C for OCR requirements. Under no circumstances shall the receiving party be required to rely upon a less accurate version of the text than the producing party. For example, if the producing party has access to extracted text from electronic document files, the receiving party shall receive extracted text as well, instead of OCR'd text generated from an image file.

K. **Spreadsheets.** Spreadsheets shall be produced as a native document file along with the extracted text and relevant metadata identified in Appendix 2 for the entire spreadsheet, plus a Bates-numbered TIFF image slip-sheet stating "Document [Bates number] is a spreadsheet that has been produced in native format." Alternatively the parties may agree to produce an image of the spreadsheet with all worksheets, fields and rows unhidden, fully expanded and printed over and then down if the width is wider than one sheet.

L. **Microsoft PowerPoint or other slide programs.** Documents shall be processed with hidden slides and all speaker notes unhidden, and shall be processed to show both the

slide and the speaker's notes on the TIFF image. If document versions are not produced as native files, then (a) color documents shall be converted to color TIFF images, and (b) black and white documents shall be converted to black and while TIFF images, provided however proper grayscale printing shall be enabled to ensure that any dark colored text will not be hidden from view by other dark objects/drawings around the text.

M. Structured Data. To the extent a response to discovery requires production of discoverable electronic information contained in a database, the producing party shall consider methods of production best providing all relevant information, including but not limited to duplication of databases or limited access for the purpose of generating reports. Parties should consider whether all relevant information may be provided by querying the database for discoverable information and generating a report in a reasonably usable and exportable electronic file (for example, Excel, MDB, CSV or SQL format). If that format is agreed upon, a document reference sheet shall be provided to describe the purpose of the database and meaning of all tables and column headers produced.

N. Audio and Video Files. All audio files and video files shall be produced in native format with the source file path provided. For the purposes of identifying metadata to be collected in Appendix 2, audio and video files will be considered e-documents.

O. Native File Productions. Various types of files, including but not limited to spreadsheets, media files, Microsoft documents with embedded media files, documents with “macros”, etc., lose significant information and meaning when produced as an image. To the extent that this Specification indicates that the files are to be produced in native format, the parties will reserve specific Bates ranges for documents produced in

native format. Any native files that are produced shall be produced with a Bates-numbered TIFF image slip-sheet stating "Document [Bates number] is a [document type] that has been produced in native format." The slip-sheet shall also contain a MD5 hash generated for the produced native file. Any native files that are produced shall be produced with the source file path provided, as well as all extracted text and applicable metadata fields set forth in Appendix 2.

P. Confidentiality Designations. If a party converts native files or other ESI designated "Confidential" or "Highly Confidential" to hardcopy form, it shall mark the physical document with the appropriate designation. Further, to the extent confidential files or documents are produced in native format, all produced media shall be marked as containing confidential files or documents, and the producing party shall provide a transmittal letter that alerts the receiving party that the production contains confidential files or documents.

Q. Exception Report. Upon completion of production for a Custodian, the producing party shall compile an exception report enumerating any unprocessed or unprocessable documents, their file type and the file location.

R. Additional ESI Production Protocols.

1. **Database Load Files/Cross-Reference Files.** Documents shall be provided with (a) a delimited data file (.dat, .csv or .txt) and (b) an image load file (.lfp, .opt or .dii), as detailed in Appendix 1.

2. **File size limitation/Non-Standard Files.** The format of production of unusually large files and non-standard electronic files, large oversized documents (*e.g.*, blueprints), etc., will be discussed before production to determine the optimal production format.
3. **Color.** Except as noted in paragraph III (L) above, with notice to the receiving parties, documents containing color need not be produced initially in color. However, if an original document contains color necessary to understand the meaning or content of the document, the producing party will honor reasonable requests for a color image of the document.
4. **Replacements.** All files that are replaced for any reason must be annotated with an "-R" designation appended to the original production number.
5. **Clawback procedure.** Any documents recalled due to a mutually-agreed-upon clawback provision shall have a specific protocol followed to ensure all copies of each such document are appropriately removed from the system.

V. MISCELLANEOUS PROVISIONS

A. Nothing in this Standard shall be interpreted to require disclosure of information that is not reasonably calculated to lead to the discovery of admissible evidence or of information protected by the attorney-client privilege, work-product doctrine, or any other applicable privilege or immunity. The parties do not waive any objections as to the production, discoverability, admissibility or confidentiality of physically stored information or electronically stored information.

B. Any practice or procedure set forth herein may be varied by agreement of the parties and confirmed in writing where such variance is deemed appropriate to facilitate the timely and economical exchange of physically stored information or electronically stored information.

C. Nothing in this Specification shall affect, in any way, a producing party's right to seek reimbursement for costs associated with collection, review and/or production of physically stored information or electronically stored information.

APPENDIX 1: FILE FORMATS

Image Load Files

- Every document referenced in a production image load file shall have all corresponding images, text, and data logically grouped together.
- Documents shall be produced in only one image load file throughout the productions, unless that document is noted as being a replacement document in the Replacement field of the data load file.
- The name of the image load file shall mirror the name of the delivery volume, and should have an .lfp, .opt or .dii[3] extension (*e.g.*, ABC001.lfp).
- The volume names shall be consecutive (*i.e.*, ABC001, ABC002, et. seq.).
- The load file shall contain one row per Tiff image.
- Every image in the delivery volume shall be contained in the image load file.
- The image key shall be named the same as the Bates number of the page.
- Load files shall ***not*** span across media (*e.g.*, CDs, DVDs, Hard Drives, etc.), *i.e.*, a separate volume shall be created for each piece of media delivered.

[3] If .dii file is produced, the accompanying metadata load file shall be separate from the .dii file and not contained within the .dii file.

Metadata Load Files

- The metadata load file shall use the following delimiters:
  - Column Delimiter: Pipe – | (ASCII 124)
  - Text Qualifier: Caret – ^ (ASCII 94)
  - New line: Registered sign - ® (ASCII 174)
- Data for documents shall be produced in only one data load file throughout the productions, unless that document is noted as being a replacement document in the Replacement field of the data load file.
- The first record shall contain the field names in the order of the data set forth in Appendix 2.
- Metadata fields that are not applicable to a document shall be filled with a single blank space. NULL values shall be produced for fields that were not able to be obtained due to a processing error or corrupt file.
- All date fields shall be produced in "mm/dd/yyyy hh:mm:ss AM" format.
- A carriage-return line-feed shall be used to indicate the start of the next record.
- Load files shall ***not*** span across media (*e.g.*, CDs, DVDs, Hard Drives, etc.); a separate volume shall be created for each piece of media delivered.
- The name of the metadata load file shall mirror the name of the delivery volume, and shall have a .dat, .csv or .txt extension (*i.e.*, ABC001.dat).
- The volume names shall be consecutive (*i.e.*, ABC001, ABC002, et. seq.).

Appendix 2: ESI Metadata and Coding Fields

The Federal Rules of Civil Procedure require that discoverable information must be produced in "the form or forms in which it is ordinarily maintained or in a reasonably usable form or forms." Fed. R. Civ. P. 34 (b)(2)(E)(ii). There is now considerable case law where Courts have considered the parties obligations under Rule 34 of the Federal Rules of Civil Procedure and concluded that it is improper to take an electronically searchable document and either destroy or degrade the document's ability to be searched.[4] Individuals and corporations routinely use metadata in the ordinary course of business to identify, organize and search documents. Efforts should be made by all parties to preserve and use metadata in order to optimize the usefulness and versatility of discoverable information. This Specification delineates the metadata fields required to afford the most efficient and productive review of the produced documents and accompanying metadata. In addition to the GROUP designation for metadata fields described here, please see ***Table 2.1- ESI Metadata and Coding Fields***, below, for a listing of Field Name, Field Description, document applicability and Example Values.

The metadata fields are categorized below in two groups:

- **GROUP 1** is comprised of basic metadata fields. These fields are either necessary for production in the case of physically stored information or readily available from electronically stored information. They are basic information that the producing party would maintain and use regularly in the creation, use and retention of the documents and therefore should be made available in discovery.

- **GROUP 2** is comprised of fields that will aid in resolving problems, inconsistencies and changes which typically arise during the discovery process, particularly in more complex matters. Anticipating that some problems and discrepancies are unavoidable and planning for them in advance by the addition of the Group 2 fields allows parties to resolve common issues with less effort in the future, ultimately making discovery more efficient.

[4] Covad Commc'ns Co. v. Revonet, Inc., 260 F.R.D. 5, 13 (D.D.C. 2009).

GROUP 1:

- *"ProdBeg"*; *"ProdEnd"*; *"BegAttach"*; and *"EndAttach"* are basic fields identifying control numbers or Bates numbers for the beginning and ending pages of electronic files and their attachments.

Other Group 1 fields are common to electronic documents and email and are self explanatory. These include *"Custodian/Source"*; *"DocumentType"*; *"EmailSubject"*; *"DateSent"*; *"To"*; *"From"*; *"CC"*; *"BCC"*; *"Attach"*; *"FileName"*; *"Title"; "Subject"*; *"DateRcvd"*; *"TimeRcvd"* and *"TimeSent"*.

Other Group 1 fields pertain to native files such as *"DocExt"*; *"NativeFile"*; *"ParentDate"* and *"ParentId"*.

Additional explanation is provided for the following Group 1 fields:

- *"DateCreated"*; *"TimeCreated"*; *"DateLastMod"*; and *"TimeLastMod"* are fields essential to establishing temporality when, for example, a draft email, email attachment or e-document is produced. A draft email or an e-document attached to an email typically lacks a *"DateSent"*, *"TimeSent"*, *"DateRcvd"* and *"TimeRcvd"* field, but has important information regarding the time/date that the draft or document was first created and when it was last modified. The producing party may opt to combine or separate date and time fields, but once the format for the date and time fields has been established, the format should be consistent for all productions. In the case of email attachments and e-documents these fields are critical as it is unlikely that an attachment or e-document will have a date/time of sending or of receipt, but such documents will have a date/time of creation and last modification. This information is created and used in the ordinary course of business and is essential to an evaluation of the produced documents and to establishing the sequence and timeliness of communications and knowledge. All parties should be cognizant that date fields can be overwritten if care is not taken to preserve that data in the collection and production processes.

- *"Folder"* and *"Source File Path"*

A typical review of a discovery production will be seriously compromised if a party is unable to understand and review documents in the context of how they were organized and saved for recall in the ordinary course of business. These fields should completely disclose the context path leading to the folder in which the document was found and the name of the folder. The producing party relies upon this information to find documents for use. The same information should be provided to the receiving party or there is degradation in the documents ability to be searched and accessed.

In the case of produced email, the Folder structure should be produced to disclose the folders and subfolders within which the produced mail object was extracted. Typically this is identified in the folder's properties as *"Location"* which provides the folder name and the complete path of nested folders for the mail object. In the case of e-documents the Source File Path discloses the folder location of the file and the context that the file/folder was located and the nested folder structure from the root directory. It is very common that computer users utilize the naming of folders to establish context and to memorialize the importance, source, and other important information used in the ordinary course of business.

- *"Author"*

This field describes who created a particular document. An email will have a *"From"* field, while an email attachment or e-document most often contains an *"Author"* field.

- *"MD5Hash"*

The field entitled *"MD5Hash"* contains a calculated value which will enable a party to unambiguously determine that a native file used in the course of this matter is exactly the same as the one that was produced and identified with a single bates stamped slip sheet. This is a simple and straightforward way of avoiding misunderstandings. In the event native files are produced, this will be an effective way of unambiguously identifying these documents that lack bates numbers. If and when such native files are produced, the *"MD5Hash"* metadata field should be provided.

- *"Importance"* (email)

Many emails designated as "Important" are flagged with an exclamation point and used customarily to draw rapid attention to important matters and to facilitate the timely reading of incoming email. Such designations are typically created by the email author and used in the ordinary course of business to prioritize the transmission and review of transmitted emails.

- *"Redacted"*

This indicator/flag is used to identify documents that have been redacted prior to production. This enables rapid identification of the redacted documents without having to manually attempt to identify them through an individual page review.

GROUP 2:

- *"ProdVol"*

This field identifies the production media volume on which a particular document is contained when transmitted. This field facilitates communication (as an adjunct to bates number range field), and is useful in quickly locating documents. The volume identification on which the produced material was delivered should be identified for each document. Such a volume designation simplifies coordinating communications regarding these materials including updates, insertions and other administrative actions should these be required.

- *"PageCount"*

A page count should be produced for each document to facilitate accounting for changes made to the produced documents. Reproductions of previously produced documents, page insertions and other corrections can more easily be facilitated if a corroborating piece of metadata is available in addition to *BegBates* and *EndBates*.

- *"AttachmentCount"*

The total number of attachments or embedded objects for all email or e-documents should be provided to identify document with missing attachments. In the event that a party is willing and able to identify all missing attachments and embedded objects, this metadata can be omitted.

- *"CustodianID"*

An unambiguous identification number should be produced for each document to identify the original source custodian of each produced document. Different custodians having the same name will be discerned by different custodian ID's. Similarly, materials are often collected and produced having different lemma and variants of names for the same custodian. In this case the *"CustodianID"* can be used to properly and unambiguously identify materials originating from the same custodian. This field helps to avoid problems that occur when produced custodians have the same or highly similar names and also when a single custodian's materials are produced with different names and designations.

Appendix 2 – Table 2.1- ESI Metadata and Coding Fields:

Field Name	Field Description	Populated For (Email, E-documents, E-attachments, Physicals)	Example Values	GROUP
ProdBeg	Control Number for the first page of the document.	All	Prefix-0000000001	1
ProdEnd	Control Number for the last page of the document.	All	Prefix-0000000002	1
BegAttach	Control Number of the first production Bates number of the first document of the attachment.	All	Prefix-0000000003	1
EndAttach	Control Number of the last production Bates number of the last document of the attachment.	All	Prefix-0000000005	1
Custodian /Source	Custodian name produced in format: **Lastname, Firstname.** Where redundant names occur, individuals should be distinguished by an initial which is kept constant throughout productions. For instance: Smith, John A. and Smith, John B.	All	Smith, Jane; Smith, John A.; Smith, John B.; Taylor, Michael	1
DocumentType	Descriptor for the type of document: "**E-document**" for electronic documents not attached to emails; "**Emails**" for all emails; "**E-attachments**" for files that were attachments to emails; and "**Physicals**" for hard copy physical documents that have been scanned and converted to an electronic image.	All	Email	1

Field Name	Field Description	Populated For (Email, E-documents, E-attachments, Physicals)	Example Values	GROUP
FileName	File name of the E-document, Email, or E-attachment including the native file extension.	Email, E-documents, E-attachments	Text of the subject line.htm	1
DocExt	The file extension of the document is defined as the substring of the file name which follows but does not include the last occurrence of the dot character.	Email, E-documents, E-attachments	Htm	1
NativeFile	Represents that this file is produced in its native file format.	E-documents, E-attachments	Flag	1
EmailSubject	Subject line of an email.	Email	Text of the subject line	1
To	All SMTP addresses of all recipients that were included on the "To" line of the email. Multiple recipients should be delimited by the semicolon character.	Email	larry.murphy@email.com	1
From	The name and email address of the sender of the email.	Email	Bart.Cole@email.com	1
CC	All recipients that were included on the "CC" line of the email.	Email	sstephens44@email.com	1
BCC	All recipients that were included on the "BCC" line of the email.	Email	ceo-gs@email.com	1
DateSent	Date and time an email was sent.	Email	mm/dd/yyyy hh:mm:ss AM	1
Time Sent*	Date and time an email was sent.	Email	mm/dd/yyyy hh:mm:ss AM *** If Time Sent is included as part of Date Sent this field is not required**.	1

Field Name	Field Description	Populated For (Email, E-documents, E-attachments, Physicals)	Example Values	GROUP
DateRcvd	Date and time an email was received.	Email	mm/dd/yyyy hh:mm:ss AM	1
TimeRcvd*	Date and Time an email was received.	Email	mm/dd/yyyy hh:mm:ss AM * **If Time Rcvd is included as part of Date Rcvd this field is not required**.	1
Attach	The file name(s) of the documents attached to Emails, or E-documents. E-documents with embedded documents such as documents contained in a ZIP file should have the embedded document name(s) listed here. Multiple files should be delimited by a semicolon character.	Email, E-documents	AttachFilename1.ext; AttachFilename2.ext; AttachFilename3.ext	1
ParentID	Control Number for the first page of the parent document.	Native / Email, E-documents, E-attachments	Prefix-0000000001	1
ParentDate	Date of native file.	Native / Email, E-documents, E-attachments	mm/dd/yyyy hh:mm:ss AM	1
DateCreated	Date and time the document was created.	Email, E-documents, E-attachments	mm/dd/yyyy hh:mm:ss AM	1
TimeCreated*	Date and Time the document was created.	Email, E-documents, E-attachments	mm/dd/yyyy hh:mm:ss AM * **If Time Created is included as part of Date Created this field is not required**.	1
Title	Any value populated in the Title field of the document properties.	E-documents, E-attachments	Title	1
Subject	Any value populated in the Subject field of the document properties.	E-documents, E-attachments	Subject	1
Author	Any value populated in the Author field of the document properties.	E-documents, E-attachments	Author	1

Field Name	Field Description	Populated For (Email, E-documents, E-attachments, Physicals)	Example Values	GROUP
DateLastMod	Date and time the document was last modified to the file system of the original media from which it was collected.	Email, E-documents, E-attachments	mm/dd/yyyy hh:mm:ss AM	1
TimeLastMod*	Date and Time an email was last modified.	Email, E-documents, E-attachments	mm/dd/yyyy hh:mm:ss AM *** If TimeLastMod is included as part of DateLastMod this field is not required.**	1
Folder	Email message directory.	All	Mailbox – Smith, Joe\Inbox\Client Materials\Crivella West\	1
Importance	Priority.	Email	Flag	1
MD5Hash	Checksum for a file, a 128-bit value.	Email, E-documents, E-attachments	e4d909c290d0fb1ca068ffaddf22cbd0	1
Redacted	Descriptor for documents that have been redacted. "Yes" for redacted documents; "No" for unredacted documents.	All	Yes	1
Replacement	Descriptor for documents that are replacements for previously-produced documents. "Yes" for replacement documents, "No" for non-replacement documents.	All	Prefix-0000000003-***R***	1
SourceFilePath	The directory structure of the original file(s). If a file is inside of a container, the container name is included in the path.	Email, E-documents, E-attachments	\ C:\Documents and Settings\jsmith\My Documents\CLE material\SearchTermAnalysisReport.pdf	1

Field Name	Field Description	Populated For (Email, E-documents, E-attachments, Physicals)	Example Values	GROUP
AttachmentCount	The total number of attachments including any attachments that were not processed and the contents of additional attached containers. A value of zero (0) should be returned for any files/documents without attachments.	All	3	2
CustodianID	Unique ID number for each produced custodian.	All	001; 002	2
PgCount	Number of printed pages in the document.	All	2	2
ProdVol	Name of media that data was produced on.	All	Wave 001 – Hard Drive	2
Size	Size (in bytes) of the original file.	Email, E-documents, E-attachments	1408	2

Crivella West's Recommendations to Investigate Alternate Sources of ESI

To ensure that all possible relevant ESI is collected, Crivella West recommends that the investigation and collection be broadened to include alternative communication aliases, programs, networks, devices and methods. The following is a guideline, highlighting areas that should be considered for investigation and collection.[5]

Custodians

- Identify all key custodians and collect all work-related ESI.
- Identify all personal assistants or secretaries of key custodians, collect and search for relevant material.
- Identify former employees and/or former participants, collect and search for relevant material.
- Identify relevant Third Parties, collect and search for relevant material.
- Identify relevant Consultants, collect and search for relevant material.

Devices

- Collect and analyze all mobile communication devices used by relevant custodians (*e.g.*, Blackberry, Droid, I-Phone, other PDA devices).
- Identify devices with photographic capability (*e.g.*, iPhone), analyze for relevant material (*e.g.*, picture of whiteboard – sent to other co-workers)
- Collect all voice-mails from devices (*e.g.*, local devices, corporate servers) and review for relevant material.
- Collect the internal hard drive from digital copiers with scan/e-mail capability and review for relevant material.

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- Collect all other storage devices (*e.g.*, flash drives, thumb drives, USB drives, external hard drives) and review for relevant material.

Communication Applications/Aliases

- Identify all key custodians' personal, non-work issued and/or outside e-mail addresses (*e.g.*, gmail, hotmail, yahoo e-mail accounts), collect and search for relevant material.
- Identify relevant group e-mail accounts within the organization (*e.g.*, executivegroup@XYZ.com), collect and search for relevant material.
- Collect attachments, compressed files, embedded files and imaged text; decompress; search for relevant material.
- Identify alternative text messaging services (*e.g.*, Short Message Service "SMS", Multimedia Message Service "MMS"), collect and search for relevant material.
- Identify instant messaging programs (*e.g.*, Skype, AIM, Windows Live, Google Chat, Yahoo Messenger), collect and search for relevant material.
- Determine usage by relevant custodians of social media sites (*e.g.*, Facebook, Twitter, LinkedIn) and search for relevant material.

Other Considerations

- Identify and document the Records Management and Document Retention policies of the organization.
- Determine when/whether a litigation hold notice has been sent to the proper custodians, along with follow-up to ensure that the criteria delineated in the notice have been followed.
- Identify and document the replacement/rotation cycle for back-up tapes, as it impacts the timeframe of the search for relevant material.
- Determine the synchronization protocol between an organization's mail servers and custodians' personal machines and devices. Reconcile across devices to ensure all messages are collected for analysis, and search for relevant material.