



Neutral Citation Number: [2019] EWHC 58 (Ch)

Case No: HC-2017-000482

IN THE HIGH COURT OF JUSTICE
BUSINESS AND PROPERTY COURTS OF ENGLAND AND WALES
INTELLECTUAL PROPERTY LIST (ChD)

Royal Courts of Justice
The Rolls Building
7 Rolls Buildings
Fetter Lane
London EC4A 1NL

Date: 21/01/2019

Before :

MR JUSTICE BIRSS

Between :

(1) INVISTA TEXTILES (UK) LTD
(2) INVISTA TECHNOLOGIES SARL
- and -

Claimants

(1) ADRIANA BOTES
(2) ACHUHANUNNI CHOKKATHUKALAM
(3) CHANGLIN CHEN
(4) VIDERABIO LIMITED
(5) VIDERA SERVICES LIMITED

Defendants

Sue Prevezer QC and Quentin Cregan (instructed by **Quinn Emanuel Urquhart Sullivan LLP**) for the **Claimants**
Adrian de Froment (instructed by **Virtuoso Legal**) for the **Defendants**

Hearing dates: 3rd, 4th, 8th - 11th and 19th October 2018

Approved Judgment

I direct that pursuant to CPR PD 39A para 6.1 no official shorthand note shall be taken of this Judgment and that copies of this version as handed down may be treated as authentic.

.....
MR JUSTICE BIRSS

Mr Justice Birss :

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Introduction

1. The claimants (together Invista) are part of one of the world's largest international textile and polymer groups. The business makes polymers, chemical intermediates and fibres including nylon and the intermediates used to make nylon. The well known brand LYCRA is one of Invista's brands. The intermediates and textile business was originally part of Dupont (part of it having derived from ICI). It was sold in 2004. Today Invista is part of the Koch Industries group based in Wichita, Kansas, USA.
2. The individual defendants (Dr Botes, Dr Chokkathukalam and Dr Chen) are scientists. They are former employees of Invista (the first claimant company). The fourth defendant, VideraBio Ltd, is dormant. The fifth defendant, Videra Services Ltd, employs Dr Botes and Dr Chen. Dr Botes is currently the sole shareholder and director of the fifth defendant although her husband, Dr Robin Mitra, was a shareholder of the fifth defendant until 6th April 2016 and a director until 1st August 2017 (according to filings made to Companies House).
3. A common form of nylon is nylon 6,6. The numerals refer to the number of carbon atoms in the monomer intermediates (such as adiponitrile) which are then polymerised to make the polymer. The intermediates are produced from raw materials (such as butadiene) which themselves are derived from oil. That is why products like nylon are called petrochemicals. Of course oil is not regarded as a sustainable natural resource and in 2010 Invista set up a Sustainability Group. The precise role of the Sustainability Group is disputed but broadly it is clear that part of its remit was to conduct research into ways of producing intermediates by other routes, distinct from oil. The aim was to make the intermediate compounds or their precursors biochemically, by genetically engineering suitable microorganisms. The

microbes might consume sustainable feedstocks such as carbon dioxide and turn them into useful organic chemicals such as 1,3 butadiene.

4. As part of this work Invista had a contract with a company called SilicoLife.
5. In 2010 Dr Botes was an experienced biotechnologist. She started working for Invista in July 2010 and joined the Sustainability Group. Within the Sustainability Group she was Biotechnology Group Leader until July 2014 and then R&D Director. She was responsible for the relationship with SilicoLife for a number of years.
6. By 2011 Dr Chen was a biochemist and molecular biologist with extensive experience in the laboratory. He had worked with Dr Botes before and in January 2011 Dr Chen joined Dr Botes' biotechnology group at Invista.
7. In March 2014 Dr Chokkathukalam started working at Invista and joined the group. His expertise was in computational biology and bioinformatics.
8. The fifth defendant company (Videra Services) was incorporated on 22nd January 2015. Initially it was used as the vehicle for Dr Mitra, who is also a biotechnologist, to contract out his services. All three individual defendants became disillusioned with their work at Invista. In January 2016, while still employed at Invista, Dr Botes started looking to set up a new biotechnology venture. She did not regard it as a venture which would compete with Invista in future or would use any Invista trade secrets. Her view was that while the new work would involve working on genetically engineering microbes to produce useful chemicals from sustainable feedstocks, the microbial strains, the particular feedstocks and the chemical end points were quite different from the ones Invista was interested in.
9. Dr Chokkathukalam and Dr Chen assisted Dr Botes with this work, also while still employed at Invista. The new venture was to be called VideraBio. As part of that effort, Dr Botes dealt with SilicoLife with a view to a joint venture with them in future.
10. Dr Botes gave in her notice in March 2016. Her final day of employment was disputed but I find it was 14th April 2016. Once she left Invista she became a director of Videra Services and worked to set up the VideraBio venture. It appears that this venture was intended to have been conducted through the fourth defendant, VideraBio Limited, which was incorporated on 5 August 2016. However in practice, the fourth defendant did nothing and VideraBio is a trading name for the fifth defendant.
11. Dr Chen gave notice on 28th July 2016. His last day at work was 5th August 2016 and his employment terminated on 31st October 2016. He started working for VideraBio on 1st November 2016.
12. Dr Chokkathukalam gave notice on 28th October 2016. His final day of employment was 28th November 2016. Shortly after that Dr Chokkathukalam joined Vianet, an unrelated IT company. He has left biology altogether.
13. In January 2017 Invista discovered various files relating to VideraBio on Dr Chokkathukalam's work computer. Proceedings were commenced on 22nd February 2017 based on allegations of breach of contract or breach of equitable obligations,

predominantly in relation to misuse of confidential information, and inducing a third party breach of contract (the third party being SilicoLife).

14. An interim injunction was sought. It was compromised and the first consent order was made by Rose J on 2nd March 2017. The defendants agreed to search for and deliver up any material containing Invista's confidential information or which was Invista's property. There were problems with compliance with that order and a further order, also by consent, was made by Mann J on 16th June 2017 (the second consent order). This provided for forensic imaging of the defendants' various devices and accounts. In the consent order the defendants agreed that any material found which was "Invista Material" would be delivered up and destroyed. The term Invista Material was defined at the interim stage. Although the definition was not formally identical to the definition of Company Property in the employment contracts, the two can be treated as synonymous for all purposes, as Dr Botes accepted.
15. The forensic process took a long time. During that process thousands of deleted files were found. The defendants contend that these were largely emails and attachments which had been sent to permit the individual defendants to work at home as part of their employment, the files were not used for the benefit of VideraBio and aside from the Chen Library (see below) the files were unrelated to one another. The defendants contend that the fact they were deleted was not sinister at all. The documents had simply been deleted in the ordinary course of things (subject to a point on Dr Chen). The forensic exercise recovered these deleted files and this leads to one of the major disputes between the parties. The evidence discussed various "levels" of deletion of electronic files. Deletion to "Level 3" equates to removing the deleted document from the recycle bin in a Windows computer. Such documents are only recoverable with special software.
16. On 20th March 2018 Lance Ashworth QC made a further order concerning this forensic process and by the summer of 2018 the process had finished. Invista sought summary judgment of certain claims before Arnold J. That application was dismissed on 14th September 2018. It was explained to Arnold J and has been repeated before me that the real dispute between the parties was then and is now about costs. Following that application amendments were made to the Particulars of Claim to add references to Company Property to the various paragraphs which previously referred only to misuse of confidential information.
17. Although it is plain that the main dispute between the parties is costs, the fact remains that this is a trial of the merits of whatever causes of action are in issue. While the general principle is that the successful party's costs are paid by the unsuccessful party, it is not immediately apparent that the very high costs which have been incurred (I am told Invista's costs so far are more than £1 million) necessarily fall to be regarded as costs attributable to at least some of the causes of action which are still in issue. In any event, this trial is a necessary step in bringing these proceedings to a conclusion, absent agreement. Nevertheless, for example, one of the issues to be decided is the scope and reasonableness of a clause in the various employment contracts which provides for a post-termination restraint. The period of this restriction is three months. It expired long ago. It is not obvious how victory to one side or the other on that issue has much to do with the vast majority of the costs which have been incurred. Those costs appear to relate mostly to the documents.

The issues

18. To explain what is in issue I will start with the documents. Pursuant to the first consent order 12 documents were produced, one by Dr Botes and eleven by Dr Chokkathukalam. No documents were produced by Dr Chen or by the corporate defendants. The 12 documents are listed in Schedule 1 to a witness statement of one of Invista's witnesses, Dr Foster. The single document produced by Dr Botes is a list of patent applications, most but not all of which naming Dr Botes as an inventor. Its filename is doc1.docx. The eleven documents from Dr Chokkathukalam are emails from him and attachments to those emails. The main question relating to these 12 documents is whether they are Company Property. All these documents were either live or in recycle bins (i.e. not deleted to level 3).
19. Pursuant to the searches of the defendants' various devices which were undertaken by the experts pursuant to the second consent order a further 7,767 documents were found. These are categorised in Schedules 2 to 11 of Dr Foster's evidence.
20. The substantial majority (5,882) (=5381 + 501) of these documents are what has been called the Chen Library. That is a collection of published scientific papers collated by Dr Chen. They are not said to amount to confidential information but Invista contends that 5,381 of them are Company Property because they were acquired and downloaded by Dr Chen while he was employed and as part of his employment. The reason the remaining 501 are not alleged to be Company Property is because there is some evidence based on dates in the IT system that they may have been collated before or after Dr Chen's employment. Of the 5,381 documents, a large proportion of them were recovered using the forensic tools because they had been deleted to Level 3 by Dr Chen, mostly (but not all) during his employment.
21. Of the remaining 1,885 (=7,767-5,882) documents, there are 350 documents which were found on a USB memory stick in Dr Botes's possession. In the proceedings the device is designated VL-30. Dr Botes says (and I accept) that she was unaware that she had that USB memory stick. It was in a bag from a scientific conference which was left in a barn at her home. Of those 350, 349 were deleted to level 3. The single live document is an Invista Powerpoint slide which plays a part in the case related to another slide called the CBMNet slide (see below). The USB memory stick is admitted by the defendants to be Company Property.
22. Of the remaining 1535 documents (=1885-350), the defendants say there are 42 "live" documents in dispute that the defendants have refused to deliver up (the "Undelivered Documents"). "Live" means undeleted at the point when each defendant's employment had ended. It is also referred to as "Level 1". In addition to the 42 Undelivered Documents, there were a number of other live documents located on the defendants' devices after their employments had ended, although these have since been delivered up.
23. The 42 Undelivered Documents consist of 27 documents recovered from Dr Botes's devices, 10 from Dr Chokkathukalam, 3 from Dr Chen and 2 from Dr Mitra. Again starting from the total of 42 Undelivered Documents, 6 of them (4 from Dr Botes and 2 from Dr Mitra) are versions of a Powerpoint slide created by Dr Botes known as the CBMNet slide. For present purposes the 6 versions of the CBMNet slide are the same. These 6 make up Dr Foster's Schedule 11A.

24. Invista contends this CBMNet slide embodies Invista confidential information. The use of this CBMNet slide is Invista's only case on misuse of confidential information (as opposed to a case based on Company Property). There is also a question whether the CBMNet slide is Company Property. The single live document of the 350 on Dr Botes USB memory stick referred to above is an Invista slide which looks very similar to the CBMNet slide although it is accepted by Invista that Dr Botes did not copy that particular electronic document when she made the CBMNet slide.
25. The remaining 36 Undelivered Documents ($42 - 6 = 36$) make up Dr Foster's Schedule 11C. The 36 consists of 23 from Dr Botes, 10 from Dr Chokkathukalam and 3 from Dr Chen. They are all documents relating to VideraBio which were created or worked on by one of the defendants during their period of employment for Invista. This is not said to involve a misuse of confidential information but it is alleged that these documents are Company Property and what the defendants were doing at the time was a breach of their employment contracts.
26. Of the remaining 1493 ($=1535-42$) a further 3 documents are described in Invista's closing submissions as "competitor searches". They were created by Dr Chen. These are not part of the 42 Undelivered Documents (i.e. the defendants have delivered them up), but the defendants nevertheless dispute that they constitute Company Property. They are in Foster Schedule 8.
27. Of the remaining 1490 ($=1493-3$) a further 16 documents were dropped by Invista in closing. These 16 were in Dr Foster's Schedule 11B and related to acetaldehyde synthesis using *Clostridium* and a patent application filed by Dr Botes on behalf of VideraBio.
28. That leaves 1474 documents ($=1490-16$). These are all documents that the defendants have admitted are Invista Material (and now also Company Property). Invista's position as I understand it is that because these are admitted to the Company Property, no issue arises in relation to them. I will refer to documents in this class as NACP documents for "No issue Admitted Company Property" documents.
29. Of these 1474 NACP documents, 1349 of them were deleted to level 3, whereas 125 were not.

Another way of dividing up the documents

30. The analysis above divides the documents into groups based on what sort of document they are and what issues that raises. There is another way of dividing up the documents found pursuant to the second consent order (i.e. excluding the 12 documents found pursuant to the first consent order, which I have dealt with in paragraph [18] above), based on the person in whose possession they were found in. The total of 7767 consists of 402 from Dr Botes, 15 from Dr Chokkathukalam, 7345 from Dr Chen and 5 from Dr Mitra.
31. Starting with Dr Botes, the 402 documents consist of 13 Schedule 11B documents now dropped, 27 of the disputed live documents (which consist of 4 CBMNet slide versions and 23 VideraBio Schedule 11C documents and are all part of the 42), and the 350 on Dr Botes's USB memory stick. The remaining 12 are live documents that

- have been admitted by the defendants to be Invista Material (and now Company Property). These 12 are NACP documents.
32. The 15 documents attributable to Dr Chokkathukalam consists of three groups. The first group is 10 VideraBio Schedule 11C documents which are part of the 42 Undelivered Documents. The others are 3 documents in Schedule 2, and 2 documents in Schedule 6. These 5 were all live and are admitted to be “Invista Material” i.e. (now) Company Property and are therefore NACP documents
 33. The 7345 attributable to Dr Chen can be split into the following groups.
 34. The largest group (5882 documents) constitute the Chen Library (i.e. the vast majority of documents attributable to Dr Chen in Schedule 9 to Dr Foster’s fourth witness statement), of which 501 are no longer pursued by Invista, leaving 5381 disputed Chen Library documents (as explained above). A source of some confusion for me is that total for Schedule 9 sometimes appears to be 5923 rather than 5882. The difference is accounted for by 41 documents in that schedule which are admitted to be Company Property. That admission is recorded in a spreadsheet provided by Invista’s legal team after the closing on 24 October 2018. The file is called “10490510_1_INVISTA – Working Spreadsheet (6900 documents)”. I will refer to this as the Master Documents Spreadsheet. These 41 are, I think, better seen as NACP documents rather than as members of the Chen library.
 35. Of the remaining 1463 (=7345-5882) documents attributable to Dr Chen:
 - i) 3 of Dr Chen’s documents are VideraBio Schedule 11C documents which are part of the 42 Undelivered Documents.
 - ii) A further 3 of Dr Chen’s documents are from Dr Foster’s Schedule 8, and are what Invista calls competitor searches, referred to above.
 - iii) The remaining 1457 documents attributable to Dr Chen have all been admitted by the defendants as Invista Material (and therefore as Company Property). They span a number of the schedules to Dr Foster’s fourth witness statement. These are all NACP documents. They include the 41 NACP documents in Schedule 9.
 36. The 5 documents attributable to Dr Mitra consist of 2 versions of the CBMNet slide and the other 3 are in Schedule 11B and have therefore been dropped.
 37. Pulling together the NACP documents, the 12 from Dr Botes were all live, level 1 documents, the 5 from Dr Chokkathukalam again were all live, level 1, documents and 1457 from Dr Chen were at various levels. Of Dr Chen’s 1457 NACP documents 9 were live, 99 were in the recycle bin (level 2) and 1349 were deleted to level 3. Of those 1349, 292 of them were deleted after his employment ended.
 38. The numbers set out above are my best effort to make sense of the figures provided by the parties, including after trial. I believe they reconcile.

The employment contracts

39. Many of the issues to be decided relate to the terms of the individual defendants' employment contracts. The contracts are with the first claimant. The material terms of that contract applicable to each of Dr Botes, Dr Chokkathukalam and Dr Chen are the same. They are:

“Dated []

WHEREAS the Employer has developed and uses commercially valuable trade secrets, technical and non-technical confidential information and, to guard the legitimate interests of the Employer, it is necessary for the Employer to protect certain of the information either by patent or by holding it secret or confidential: and

WHEREAS the aforesaid information is vital to the success of the Employer's Business, and the Employee through his or her activities may become acquainted therewith; and may contribute thereto either through inventions, discoveries, improvements or otherwise;

NOW THEREFORE in consideration of and as part of the Terms of Employment or continuation of employment (as the case may be) of the Employee by the Employer, it is agreed as follows

1 Confidential Information

- 1.1 During your employment you will have access to and be entrusted with confidential information and trade secrets relating to the business of the Employer. This includes but is not limited to information and secrets relating to:

1.1.1 Corporate and marketing strategy, [...]

1.1.2 Business methods and processes, technical information and know how relating to the Employer's business and which is not available to the public generally, including inventions, design, programs, techniques, data base systems, formulae and ideas.

1.1.3 Business contacts [...]

[...]

1.1.7 Any document marked confidential

- 1.2 You may not during your employment (otherwise than in the proper performance of your duties) or afterwards (otherwise than with the prior written consent of the Employer or as required by Law) use or disclose any confidential information or trade secrets concerning the business of the Employer or in respect of which the employer may be bound by an obligation of confidence to any third party. You should also use your best endeavours to prevent the publication or disclosure of such information or secrets. These restrictions will not apply after your employment has terminated to information which has become available to the public generally, otherwise than through unauthorised disclosure.

2 Intellectual Property Rights

Any intellectual property rights, including but not limited to patents, trade marks, designs or copyright works created by you during your employment with the Employer [...] will belong to the Employer. If you are asked to do so (whether during or after termination of your employment) you will at the Employer's expense execute such documents as may be necessary to give effect to this sub-paragraph and to vest all rights, title and interest in such property in the Employer and provide all reasonable assistance as the Employer may require, to obtain, maintain or enforce rights to any such intellectual property. You irrevocably authorise the Employer to appoint a person to execute any documents and to do everything necessary to effect your obligations under this clause on your behalf.

3 Return of Company Property

Upon termination of employment for any reason (or earlier if requested) the Employee will immediately deliver to the Employer all property (including but not limited to documents and software, computer hardware, fax machines, mobile telephones, credit cards, keys and security passes) belonging to the Employer and in the Employee's possession or under his or her control. Documents and software include (but are not limited to) correspondence, drawings, blue prints, manuals, diaries, address books, data bases, files, reports, minutes, plans, records, note books, documentation or any other medium for storing information. The Employee's obligation includes the return of all copies, drafts, reproductions, notes, extracts, or summaries (however stored or made) of all documents and software.

4 Other Inventions and Discoveries

The Employer and the Employee wish to exclude from the obligations and requirements of this Agreement those inventions and discoveries which have been conceived and reduced to practice prior to Employment and are identified in the Schedule to this Agreement.

5 Obligations After Termination of Employment

5.1 For the purposes of the Agreement, the following expression shall have the following meaning:

“Competing Business” means any entity or persons engaged in or about to become engaged in research, development, production, marketing or selling of a competing product(s).

“Competing Products” means product(s) process(es) or service(s) with which the employee has worked within five years preceding termination of such employment, or about which the employee has acquired the employer's trade secret, technical or non-technical information.

“Company Employee” means [...]

5.2 To protect the Employer's trade secrets, technical and non-technical confidential information, the Employee agrees that whilst the Employee is

employed by the Employer and for a period of 3 months following the termination of employment with the Employer for any reasons, the Employee shall not directly or indirectly:

5.2.1 be employed by, consult with or render services with any Competing Business

5.2.2 promote, solicit or induce for himself or any other person, any person or body whatsoever who is or has been a customer of the Employer any time during 5 years preceding such termination of employment; and

5.2.3 solicit or induce directly or indirectly for any competing business the employment of any person who is now or at any time after the date hereof is a Company Employee.

6 In the event of a violation of this Agreement by the Employee the Employer shall be entitled to seek any relief as may be appropriate including, but not limited to, the rights of injunctions and monetary damages. It is also agreed that the term of all covenants and restrictions in paragraph 5 above shall be automatically extended for a period of one year after either the date on which the Employee permanently ceases such violation, or the date of entry by a court of any order or judgment enforcing such covenant or restriction whichever occurs later.

7 If any or more provisions of the Agreement shall for any reason be held to be invalid, illegal or unenforceable in any respect, such shall not affect any other provision of the Agreement and this Agreement shall be construed as if the invalid, illegal or unenforceable provision had never been contained therein.

8 This Agreement is governed and construed in accordance with the laws of England.”

40. In addition to the contracts, other materials relating to their employment were referred to. The only one to which my attention drawn on any matter in dispute is the Code of Conduct which plays a part in the issue of the employee’s duty of fidelity while employed.

41. The parties agreed a list of issues in July 2017. It is not necessary to set it out. The list was useful but was overtaken by events. By the closing the issues which the court has to decide have crystallised down to following:

- i) *Confidential information*: is the post-employment effect of clause 1.2 enforceable? Are the individual defendants in breach of their duties of confidence towards Invista UK either arising in contract or equity?
- ii) *Company property*: Have the individual defendants retained “Company Property” in breach of clause 3?
- iii) *Competition*: is the post-employment effect of clause 5.2.1 enforceable? If clause 5.2.1 is enforceable, are the individual defendants in breach of it?

- iv) *Non-solicitation*: is clause 5.2.3 enforceable, has Dr Botes breached it?
 - v) *Duty of fidelity during employment*: Have the individual defendants failed to act in the best interests of their employer during the course of their employment? Are they in breach of clause 1.2 or 5.2.1 as those clauses apply during their employment?
 - vi) *SilicoLife*: Did any of the defendants induce SilicoLife to breach its agreement with Invista?
 - vii) To what extent (if at all) are VideraBio and Videra Services liable for the actions carried out by the individual defendants, or otherwise liable for breach of confidence, and did VideraBio and / or Videra Services procure the actions of the individual defendants and / or each other and / or was there a common design as to the same.
42. The final question is about remedies. The question is, to the extent the Defendants are liable in respect of any of the issues identified above, what remedies should be ordered against them. 42 of the documents that the Claimants allege to be Company Property have yet to be delivered up by the Defendants – i.e. the Undelivered Documents referred to above; the Claimants therefore request an order for delivery up of those documents if they are deemed to constitute Company Property. In respect of the other alleged breaches, the Claimants have asked for an inquiry as to damages. Despite the terms of clause 6, the claimant has not suggested that any relief should be granted pursuant to that clause even if the conditions for its application are found to exist.

The law

43. There was no dispute about the legal principles relating to the interpretation of contracts. The most recent Supreme Court authority is *Wood v Capita Insurance Services Limited* [2017] UKSC 24. The relevant test is summarised by Lord Hodge in paragraph 10:

“The court’s task is to ascertain the objective meaning of the language which the parties have chosen to express their agreement. It has long been accepted that this is not a literalist exercise focused solely on a parsing of the wording of the particular clause but that the court must consider the contract as a whole and, depending on the nature, formality and quality of drafting of the contract, give more or less weight to elements of the wider context in reaching its view as to that objective meaning.”

44. Lord Hodge also went on to say, at paragraph 13:

“Textualism and contextualism are not conflicting paradigms in a battle for exclusive occupation of the field of contractual interpretation. Rather, the lawyer and the judge, when interpreting any contract, can use them as tools to ascertain the objective meaning of the language which the parties have

chosen to express their agreement. The extent to which each tool will assist the court in its task will vary according to the circumstances of the particular agreement or agreements.”

45. The test is therefore an objective one; subjective evidence of any party’s intentions must be disregarded. To quote Lord Hoffmann in *Investors Compensation Scheme v West Bromwich Building Society (No.1)* [1998] 1 WLR 896 (page 912), this involves an assessment of “...the meaning which the document would convey to a reasonable person having all the background knowledge which would reasonably have been available to the parties in the situation in which they were at the time of the contract”. It also follows from this that events occurring after entry into an agreement cannot ordinarily inform its interpretation

Restrictive covenants

46. Each party relied on a convenient summary of the law by judges in the High Court. Invista referred to the summary by Richard Slater QC in *Adorn Spa Ltd v Amjad* [2017] EWHC 1313 (QB):

“7 With that background I turn to the law. It is trite law that all covenants and restraint of trade are *prima facie* unenforceable at common law and are enforceable only if they are reasonable with reference to the interests of the parties concerned and of the public. Unless the unreasonable part can be severed by removal of either part or the whole of the covenant in question, its inclusion renders the covenant or in certain circumstances the entire contract unenforceable.

8 Those principles were helpfully and accurately summarised by Sir Bernard Rix in his judgment in the case of *Coppage & Anor v Safety Net Security Ltd* [2013] EWCA Civ 1176, [2013] IRLR 970 (QB) at paragraph 15. Sir Bernard Rix stated the principles as follows:

‘(i) Post-termination restraints are enforceable, if reasonable, but covenants in employment contracts are viewed more jealously than in other more commercial contracts, such as those between a seller and a buyer.

(ii) It is for the employer to show that a restraint is reasonable in the interests of the parties and in particular that it is designed for the protection of some proprietary interest of the employer for which the restraint is reasonably necessary.

(iii) Customer lists and other such information about customers fall within such proprietary interests.

(iv) Non-solicitation clauses are therefore more favourably looked upon than non-competition clauses, for an employer is not entitled to protect himself against mere competition on the part of a former employee.

(v) The question of reasonableness has to be asked as of the outset of the contract, looking forwards, as a matter of the covenant's meaning, and not in the light of matters that have subsequently taken place (save to the extent that those throw any general light on what might have been fairly contemplated on a reasonable view of the clause's meaning).

(vi) In that context, the validity of a clause is not to be tested by hypothetical matters which could fall within the clause's meaning as a matter of language, if such matters would be improbable or fall outside the parties' contemplation.

(vii) Because of the difficulties of testing in the case of each customer, past or current, whether such a customer is likely to do business with the employer in the future, a clause which is reasonable in terms of space or time will be likely to be enforced. Moreover, it has been said that it is the customer whose future custom is uncertain that is 'the very class of case against which the covenant is designed to give protection...the plaintiff does not need protection against customers who are faithful to him' (*John Michael Design Plc v. Cooke* [1987] 2 All ER 332, 334).

(viii) On the whole, cases in this area turn so much on their own facts that the citation of precedent is not of assistance.'

9 Further help with what is meant by trade connection and the kind of matters which it is legitimate to protect can be found in the judgment of Gloster J in the case of *Brake Brothers Ltd v Ungless* [2004] EWHC 2799 (QB). Gloster J said:

'(10) Trade connection is established where it can be shown that, by virtue of his position with the employer, the employee will have recurrent contact with customers or, as in this case, suppliers, such that the employee is likely to acquire knowledge of and influence over the customers or suppliers.

(11) An employer has a legitimate interest in maintaining the stability of his workforce.'

10 Further guidance can also be found in the case of *FSS Travel & Leisure Systems Ltd v Johnson* [1998] IRLR 382, where Mummery LJ observed that:

'There must be some subject matter which an employer can legitimately protect by a restrictive covenant. As was said by Lord Wilberforce in *Stenhouse Limited -v- Phillips* [1974] AC 391 at page 400 E (cited by Slade LJ in the *Office Angels* case supra):

'The employer's claim for protection must be based upon the identification of some advantage or asset inherent in the business which can properly be regarded as, in a general sense,

his property, and which it would be unjust to allow the employee to appropriate for his own purposes, even though he, the employee, may have contributed to its creation.”

11 Finally I should note the observations of Cox J in Towry EJ Ltd v Bennett & Ors [2012] EWHC 224 (QB), who noted that:

“The reasonableness of a non-dealing clause of this kind will depend upon the nature and specialism of the market in which the employee is engaged”

47. Invista also relied on an example of a restrictive covenant that was recently upheld by both the High Court and the Court of Appeal in Dyson Technology Limited v Pelleroy [2015] EWHC 3000; [2016] EWCA 87. In that case Dyson sought to enforce a restraint against a 30 year-old engineer. The restraint prohibited the employee from being involved in a “similar” business anywhere in the world for 12 months after his employment terminated.
48. The defendants relied on the summary by Cox J in TFS Derivatives Ltd v Morgan [2005] IRLR 246 at paragraphs 36 to 40 which proposes a three stage process – first construing the clause, second considering if the employers have shown it protects legitimate business interests and third examining whether it is no wider than reasonably necessary. Even if the clause is reasonable the court will as a matter of discretion decide if injunctive relief should be granted in the circumstances at trial. If the clause is unreasonable it will be void and unenforceable. Individual words or phrases may be severable provided what is left makes sense in its own right. This approach was also cited by Snowden J in Dyson v Pelleroy.
49. In this case the employment contracts contain three relevant post-termination restrictions. One (clause 1.2) is on the use or disclosure of “Confidential Information” as defined under the contract. A second (clause 5.2.1) is a non-competition clause and a third (clause 5.2.3) is a non-solicitation clause.
50. The defendants say that the only information that can be protected post-termination by clause 1.2 is trade secrets (or information of a nature akin to trade secrets), as defined in Faccenda Chicken Ltd v Fowler [1987] 1 Ch 117. The relevance of that case is that in it the courts drew a distinction between three classes of information. The first class is highly confidential information akin to trade secrets. The second class is information which is confidential but which does not fall into the first class. One example in the second class is information which has formed part of the employee’s stock of skill and knowledge. The third class is information which is not really confidential at all. The court held that the first class can be protected by an implied term in the contract which would be a reasonable restraint of trade because it protects the subject matter which is subject to the non-contractual duty of confidence (see Saltman v Campbell (1948) 65 RPC 203, Seager v Copydex [1967] 1 WLR 923 and Coco v Clark [1969] RPC 41). The court also held that the post-employment use of information in the second class could not be restrained by a restrictive covenant (p137-F-G). The three classes in Faccenda were identified by Goulding J at first instance and the distinction was upheld by the Court of Appeal.

51. Invista submitted that *Faccenda* was concerned with implied obligations of confidentiality, whereas in the present case, the contracts contain an express post-termination confidentiality provision in which the parties have agreed the types of information that should be covered. However the real focus on Invista's submissions was not to argue about the post-termination effect of clause 1.2 but rather to focus on the non-competition clause 5.2.1. Implicit in Invista's case on *Faccenda* is the submission that it was concerned with use and misuse of information rather than the reasonableness of a non-compete clause. I agree.
52. The defendants also relied on the judgment of Bingham MR in *Lancashire Fires v Lyons* [1996] FSR 629 at 688-669 as follows:

“It is plain that if an employer is to succeed in protecting information as confidential, he must succeed in showing that it does not form part of an employee's own stock of knowledge, skill and experience. The distinction between information in Goulding J.'s class 2 and information in his class 3 may often on the facts be very hard to draw, but ultimately the court must judge whether an ex-employee has illegitimately used the confidential information which forms part of the stock-in-trade of his former employer either for his own benefit or to the detriment of the former employer, or whether he has simply used his own professional expertise, gained in whole or in part during his former employment.”

“...the relationship [of employment] inevitably involves the employee acquiring information about the employer's processes, which he will carry with him as part of his stock of expertise experience if and when he goes to another employer. The cases show that such information is something which he can use, after his employment has ceased, for the benefit of a competing manufacturer. As Cross J. pointed out in the *Printers and Finishers* case, there is often no clear dividing line between such information and the particular parts alleged to be secret. The implication is that, except perhaps in those cases where “secrecy” of the process or component is obvious from its very nature, the onus is on the employer to define expressly those parts of his operations which he regards as entitled to protection, and to instruct his employees accordingly. If this is not practicable, then the appropriate form of protection is a contractual restraint on competitive activity after the end of the employment (subject to the temporal and geographical constraints allowed by the considerations of reasonableness). Failing one or other of these steps he cannot normally rely on the doctrine of breach of confidence to rescue him.”

53. The last two sentences of this passage are pertinent in this case and no doubt in part explain why Invista focuses on non-competition clause 5.2.1. The legal principle is that a post-termination non-competition clause – reasonable in time and scope – may properly have the practical effect of preventing a former employee from using or disclosing information which is wider than *Faccenda* class 1. A clause with that

effect is at least capable of being reasonable in time and scope. In contrast, a blanket post-termination confidentiality clause wide enough to cover *Faccenda* class 2 information, and therefore prevent an ex-employee using what has become part of their general expertise, would not be enforceable.

54. In argument Invista emphasised that it contends that it does have a stock of information within *Faccenda* class 1– highly confidential trade secret information. I will deal with that point on the facts. If it was a submission that because some information covered by clause 1.2 is within class 1 it followed clause 1.2 was necessarily reasonable regardless of how much wider than that its scope was, then I do not agree.
55. As regards a non-contractual duty of confidence, there was no dispute that such an obligation can exist. Invista cited *Coco v Clark* (above) and also referred to Lord Neuberger’s judgment in *Vestergaard v Bestnet* [2013] 1 WLR 1556 at paragraph 23 and 25 where he noted that a person who learned a trade secret in circumstances when they reasonably did not appreciate it was confidential but was then told, would from that moment owe an equitable duty of confidence.

Duty of fidelity etc.

56. It was common ground that while they were employed, the individual defendants owed their employer the normal implied duties of loyalty, good faith, and fidelity. This was expressed in the relevant Code of Conduct as a duty to act in the best interests of Invista.

Inducement of a breach of contract

57. The principles relating to the tort of inducing a breach of contract were restated by the House of Lords in *OBG v Allan* [2008] 1 AC 1. There are four elements that must be established:
- i) a contract between a claimant and a third party must have been breached by the third party. An actual breach of the contract must take place, mere interference is not enough.
 - ii) the defendant must have known of the existence of the contract and its terms. It is not enough for the defendant to know they are procuring an act which in fact is a breach. To be liable the defendant must actually realise it will have that effect. Knowledge of circumstances which would indicate that fact to a reasonable person is not enough.
 - iii) the defendant(s) must have intended to induce or procure a breach of that contract.
 - iv) such breach of contract must have been induced by the defendant. The question is whether the defendant’s acts of encouragement, threat, persuasion and so forth have sufficient causal connection with the breach to attract accessory liability.

58. A further point, not disputed before me, was that the tort is not actionable *per se* but only when loss or damage is proved.

The witnesses

59. Invista's witnesses of fact were John Stewart and Alexander Foster.
60. John Stewart was, from May 2014 and throughout the relevant period, Vice President of Biotechnology at Invista UK. Mr Stewart's evidence was that, between May 2014 and October 2016, his role was to provide business direction to the biotechnology research and development activities and to steward Invista UK's financial investment in this effort. He added that, in October 2016, his role expanded to include overall leadership responsibilities for the Sustainability Group, including ultimate supervisory authority over Invista UK's scientists and technicians based at the Wilton Centre.
61. His evidence related to the nature and scope of Invista's business, the employment obligations of staff, the circumstances surrounding the departures of the individual defendants and how documents were found following the termination of their employment. Mr Stewart also addressed a business plan for VideraBio from March 2016 and how this was found on a workstation used by Dr Chokkathukalam. He also covered SilicoLife.
62. Much of the evidence given by Mr Stewart was contextual and not contentious but the more directly relevant evidence was often not within his own knowledge. It was reliant on other people. The defendants submitted his evidence should be disregarded when it conflicts with the defendants. That goes too far. Nevertheless I need to take care with his evidence if it conflicts with direct testimony from another person. Mr Stewart gave his oral evidence fairly in the witness box. His knowledge of biotechnology was limited.
63. Dr Alexander Foster has, since October 2014, been a bioinformatics specialist and Programme Manager at Invista. This involved coordinating the technical teams, and technically leading the biochemistry team including relationships with external collaborators. From mid 2015 until late 2016, Dr Foster was line manager to all strain engineers and after that the line and technical manager of the bioinformatics group and its collaborators.
64. His evidence related to the work carried out by the individual defendants during their employment at Invista. He also spoke to Invista's isoprene and butadiene programmes. He also gave a detailed account and categorisation of the material that Invista alleges was retained by the individual defendants.
65. The defendants submitted Dr Foster's evidence at trial had been rehearsed. I do not accept that. Nor do I accept the defendants' submission that he was willing to say things that were incorrect if he thought it would help Invista's case even if that meant contradicting himself. The example of this relied on is a very detailed point about food products, whether Invista is interested in them and what the definition of industrial biotechnology should be. That episode is an example of the tangled complexity of some of the issues and the likelihood of getting into a confusion about them. It is not evidence of a cavalier attitude to the truth by the witness. Dr Foster also gave his oral evidence fairly.

66. All of Dr Botes, Dr Chokkathukalam and Dr Chen gave evidence. Dr Botes was the primary witness. She explained what had happened, addressed the arguments about the documents in detail and also dealt with the wider technical issues. Dr Chokkathukalam and Dr Chen confined their main evidence to narrating their version of the events. They mostly left dealing with the documents to Dr Botes.
67. The claimants submitted Dr Botes took a particularly challenging and defensive approach to answering questions. There is some force in that submission. Mind you Dr Botes herself and her actions are at the heart of this dispute and she is an individual being sued personally by a major multinational corporation which has deployed all the resources at its disposal to do so. The strain that that would place on anyone would be significant. I reject the submission that Dr Botes had a selective memory. Two matters are referred to – the creation of the CBMNet slide and knowledge of the SilicoLife contract terms. I will address each in context. Overall, despite her robust approach to responding to questions in cross-examination I am sure Dr Botes was seeking to tell the truth as she saw it.
68. Invista contend that Dr Chokkathukalam was generally evasive and that his explanation that he was just seeking to help friends is inconsistent with the documents. I agree that the documents from the time Dr Chokkathukalam was still an employee of Invista do suggest that he was closely involved. I address that below. Some of the documents which describe Dr Chokkathukalam as part of the team, particularly later on, were not written by him. In my judgment they reflect the fact that Dr Botes wanted him to be involved (and wanted to present him as involved) rather than any actual desire or decision by Dr Chokkathukalam himself. In the end Dr Chokkathukalam did not join Dr Botes and Dr Chen in VideraBio. I will address the point about an offer of payment by Dr Mitra in context.
69. I reject the submission that Dr Chokkathukalam was evasive or intransigent. Like Dr Botes, he was defensive but also like Dr Botes he is an individual being sued by a major multinational. I am sure Dr Chokkathukalam was seeking to tell the truth as he saw it.
70. Dr Chen did not find the trial process easy. He is clearly a highly intelligent scientist. He was not familiar with his written evidence or many of the detailed issues in the dispute but I believe the result of this was that he simply came to court to tell the truth and did so. As a result he contradicted some arguments made on his behalf by Dr Botes but I have no hesitation in preferring Dr Chen's testimony on that issue (about the creation of the Chen Library). He also accepted that parts of his written evidence were wrong. Again I accept his oral evidence.
71. Invista submitted that each witness contradicted accounts given at the interim stage. This particularly related to documents. I accept that and have taken it into account but, while this does not justify the defendant's conduct, the same point applies to Invista's witnesses as well. Significant aspects of Invista's evidence given in interim witness statements have been shown to be wrong at trial.

A general practical point

72. A feature of the cross-examination of all the witnesses was the use throughout the trial of an electronic document presentation system instead of a paper bundle. Having

evidence available in an electronic form is very useful but can be done much more simply than this. I was not convinced the presentation system was helpful or worth the trouble it involved. Real flaws in the approach to cross-examination based on documents took place. For one thing the system often had an appreciable delay, not always obvious to the cross-examiner, which meant the witness and the cross-examiner were at cross-purposes. More significant was the way witnesses were given a single screen on which a single page being referred to was displayed in front of them. The display would frequently flash to a different page, often without warning, and often before the witness had a chance to digest it properly or understand its context. I am sure the witnesses did not always read the text as carefully as they would have done if they had some personal autonomy which allowed them some control of the text in front of them. That is the kind of autonomy a paper bundle gives a witness but it need not be on paper if the witness has some control over what is on their own screen. When it was clear this was happening I intervened to allow the witness to have a chance to read the material properly. Otherwise there would have been real unfairness. Unless such systems improve I will in future require witnesses to be given a paper bundle.

Experts

73. Invista called Professor Anthony J Sinskey as an expert witness relating to biotechnology. The defendants did not call a biotechnology expert.
74. Professor Sinskey has been Professor of Microbiology at the Massachusetts Institute of Technology since 1988. He is a named inventor on 40 patents in the fields of microbiology and biotechnology and has more than 400 scientific papers to his name. He has consulted with numerous biotech companies since 1980.
75. Professor Sinskey's evidence addressed the extent to which he considered VideraBio and Invista to be competing businesses, along with an assessment of whether certain documents contained information not available in the public domain or would assist a company such as VideraBio. He was able to help the court by explaining much of the technology.
76. Prof Sinskey was a good witness. I am grateful to him for his evidence.
77. The parties both called computer experts - for Invista Mr Steven Smith and for the defendants Mr Michael Penhallurick.
78. Mr Smith is a Senior Digital Forensic Examiner at TransPerfect Legal Solutions and has held that role since July 2018. Mr Smith properly drew attention to the fact he had worked for MD5 between 2008 and April 2017; MD5 have been involved in these proceedings as an independent IT expert investigating devices belonging to the defendants. MD5's involvement only began after he left. He did not have any knowledge of these proceedings until he was formally instructed as an expert witness.
79. Mr Smith's evidence covered a range of issues relevant to the alleged retention of electronic documents by the individual defendants following the termination of their employment, including matters relating to compliance with the Second Consent Order, the deletion of electronic documents, how deleted data can be recovered and general issues relating to metadata and its reliability. Mr Smith was also asked by

Invista's solicitors to conduct a more detailed assessment of the metadata of the files allegedly retained by the individual defendants after the termination of their employment by Invista. Mr Smith's supplemental expert report also contained evidence relating to the levels of presence of the documents in dispute on the individual defendants' devices.

80. Mr Penhallurick is a specialist "Digital Forensic Investigator" employed by a National Law Enforcement entity. He has held a number of computer forensic roles since at least July 2001, also including at MD5. His employment there predated these proceedings.
81. Mr Penhallurick's evidence covered the deletion of electronic documents, the recoverability of deleted electronic documents and a metadata analysis in respect of certain of the disputed documents.
82. Both computer experts were good witnesses, and I thank them for their evidence.

The facts

The early period

83. Dr Botes studied chemistry at the University of the Free State in South Africa between 1977 and 1983, leaving with an MSc. After doing various things, in 1997 she resumed her studies and obtained a PhD in biochemistry in 1999. From then until 2002 she was an academic at the University of the Free State teaching biochemistry and biotechnology. From 2003-2005 Dr Botes was employed by CSIR (Science Council for Industrial Research) in South Africa. This work focussed on whole cell biocatalysis of pharmaceuticals. One host organism Dr Botes worked on was *Yarrowia lipolytica*. From 2003 onwards, Dr Botes's work has led to patents being filed naming her as an inventor. In 2005, together with Dr Mitra, she founded a company Oxyrane Pty Ltd which was a spin out from the work at CSIR. This work included using *Y. lipolytica* as a host. The products to be made this way were small molecule chiral compounds.
84. In 2007 the Oxyrane business relocated to the UK and was run here using the company Oxyrane UK Ltd. The types of pharmaceutical products to be made expanded to include "biologics", in this case glycosylated enzymes and monoclonal antibodies. The host organism was *Y. lipolytica*. By 2010 around £30m venture capital funding had been secured. The company relocated to Ghent in Belgium while negotiating its acquisition by a large pharmaceutical company. Dr Botes and Dr Mitra left Oxyrane and stayed in the UK. Dr Botes was offered a job at the Wilton UK site of Invista in July 2010.
85. At this point it is convenient to describe metabolic engineering and bioinformatics. In traditional biotechnology of the kind used to make pharmaceutical protein products like insulin and erythropoietin, a single gene which consists of the DNA coding for the product is inserted into a cell which can live in culture, such as *E.coli* or CHO cells. The transformed cells take up the gene and make the desired protein. Metabolic engineering is not concerned with inserting a single gene for a single product into the host organism, but with manipulating an entire metabolic pathway in the host. This may involve numerous elements in the organism which interact with

one another. The interactions between different elements means that as the number of elements increases, the complexity of this problem increases exponentially. The desired product produced by the genetically engineered host in this example might well not be a protein. For example take cider. When apple juice is fermented to make cider a micro-organism (brewer's yeast) lives in the liquid, consumes the dissolved sugars and converts them to alcohol. Obviously alcohol is not a protein, it is a small molecule. The organism has an entire metabolic pathway which ingests sugar, converts it to ethanol and excretes the product. Conceptually perhaps that pathway could be manipulated to make a different small molecule from sugar instead of alcohol, or perhaps that entire sugar-alcohol metabolic pathway could be lifted from brewer's yeast and inserted into a new host which lives on a different food source. Metabolic engineering of the host organisms in this way is a much more complex undertaking than the kind of engineering of organisms in traditional pharmaceutical biotechnology.

86. Traditionally biological experiments may be carried out "*in vitro*" (under glass, in a test tube) or "*in vivo*" (in a living organism). With the advent of modern computers another option is available, known as working "*in silico*". Then the experiment is performed by computer modelling. The term bioinformatics is also used to refer to the use of computers to support biological research and to model biological processes.
87. One approach to metabolic engineering might be to just go ahead, make a change to a strain of living organisms and see what happens. However given the complexity of the system being manipulated this may be a very unpredictable technique. To try and make the development work more predictable, this approach may be combined with an effort to make a computer model of all the elements in the host cell and their interactions with one another. This model can then be manipulated in order to see what the effect of different changes is likely to be, what changes need to be made and how to balance enzyme activity and generally optimise the entire system. Another term for this is strain engineering – the microbe strain is engineered for the task in hand.
88. Simply as an example, one form of strain engineering optimisation discussed in the evidence was codon optimisation. It is well known that DNA encodes protein and that the genetic code is universal. The code is a string of three nucleic acids called a codon (such as TCC) and that codon represents the same amino acid (TCC codes for serine) universally in every organism. So a human DNA sequence (say for insulin) can be put into bacteria and the bacteria will make the same protein which would be made in a human cell. However for many amino acids more than one codon codes for the same amino acid. And it turns out that different organisms tend to prefer to use different codons. So if you want to make it easy for a particular strain of bacteria to make a human protein, you might want to take the human DNA sequence, which will represent the human preference for codons, and change some of the codons for the ones preferred by the bacterium. This principle applies whatever the newly inserted DNA sequences are for and so when a scientist is considering taking a metabolic pathway from one organism and putting it in another one, codon optimisation is something to consider.
89. At the level of generality set out above metabolic engineering, codon optimisation and bioinformatics was all very well known before Dr Botes started with Invista.

90. Turning back to the narrative, although technology licensing is part of Invista's business, its main focus is as an integrated producer of chemical intermediates, polymers and fibres. In 2010 Invista set up a Sustainability Group. Dr Botes was the fourth member of that group, two of the other three being based in Wilmington, USA. The other UK based employee, Dr Gary Smith, had no biotechnology background. It is clear that Dr Botes was hired because of her substantial skill, expertise and experience in biotechnology.
91. A point between the parties was the scope and purpose of the Sustainability Group. Dr Botes's evidence was that her initial remit was to assess the potential threat of biotechnology to disrupt Invista's existing petroleum based chemicals business. In my judgment that narrow and negative way of characterising Invista's interest in biotechnology is a reflection of the bitterness Dr Botes feels against her former employer.
92. By contrast Mr Stewart said:
- “One of INVISTA's key investments is in the emerging field of biotechnology, and INVISTA leverages its (and its predecessors') decades of experience in the chemicals industry to operate its own biotechnology capability within a research and development centre in Wilton in Redcar (the “Wilton Centre”). In INVISTA, we refer to this research and development team as the “Sustainability Group”. The Sustainability Group performs research and development activities aimed at developing innovative and novel manufacturing processes that utilise biotechnology for the commercial production of chemicals. The focus is on processes that have potential to significantly lower costs of production.”
93. The problem with this characterisation is that at face value it is very wide. The group was not simply concerned with the commercial production of any chemicals by any biotechnology. In my judgment from the outset and at all material times it was concerned to investigate the use of biotechnology as a way of making the chemical products Invista was already interested in, such as intermediates for nylon, from sustainable sources (as the name of the group itself indicates). No doubt if that work led to applications in other fields, that is all to the good, but that is not what the work was for.
94. Part of the work of any commercial research group will involve assessing the state of the art, the interests of the main players in that field and the existence of gaps – areas in which the group may be able to work which are not focussed upon by others. Related to this is a concept mentioned at trial called “patent whitespace”. That is the idea that by looking at the patents held by others, one might see an area to exploit which is not covered by rivals' patents.
95. The Sustainability Group did this sort of work. By November 2010 Dr Botes had identified the possibility of using biotechnology to convert Non Volatile Residue (NVR) into nylon intermediates. NVR is a waste stream produced by Invista during nylon manufacturing. Another opportunity Dr Botes identified was in the production of butadiene from butanols by enzymes.

96. In December 2010/January 2011 Dr Botes recruited Dr Chen to come and work as a research scientist for the Sustainability Group. He was to work in the laboratory and joined along with a laboratory technician.
97. Dr Chen had graduated in life sciences from Central China Agricultural University in 1982 and worked in China in biotechnology, particularly in agriculture until 1988. He then moved to Swansea and completed a PhD from Swansea University in 1992, working as a post-doc there until 1997, all in the biotechnology field. Until 2008 Dr Chen worked in biotechnological research in various laboratories (Singapore, Aberdeen and the Royal Veterinary College). In 2008 he joined Dr Botes at Oxyrane UK Ltd. He was responsible for the metabolic engineering of *Yarrowia lipolytica* to produce the compounds the company was interested in. Oxyrane closed its UK operations in December 2010 when the business moved to Ghent and that is when Dr Chen joined Dr Botes at Invista.
98. In cross-examination Dr Chen said “My dream is to produce bio-nylon”. That encapsulates the research work he was doing at Invista. He also said his dream was ruined, but I will return to that below.
99. Later in 2011 Dr Botes and Dr Chen drafted the first patent applications arising from their work at the Sustainability Group.
100. In May 2011 Invista (the second claimant) entered into a contract with a company called SilicoLife Lda. SilicoLife are based in Portugal although the company is Swiss. The contract is at C2/864 and was entitled Research and Development Services Agreement. The recitals describe SilicoLife as being in the business of creating and providing computational models and providing metabolic strategies to design optimised microbial strains for production of specific target compounds. SilicoLife was essentially going to supply services to support Invista’s research. The services were essentially to make the kind of computer models of a host organism used to facilitate metabolic engineering. They also allow for “retrosynthesis” in which the scientists work backwards from the desired end product and generate alternative routes through a microbe’s web of metabolic interactions to find a useful pathway to focus upon. By 2016 the retrosynthesis tool SilicoLife had created was called Neosynth.
101. SilicoLife already had expertise in this area, including computer modelling tools. There are computer modelling tools in the public domain to undertake this kind of work, albeit those tools are not as good as the ones privately available such as via SilicoLife. However the value for Invista of this relationship was that SilicoLife would develop their tools and apply those tools to the particular host organisms, metabolic pathways and retrosyntheses Invista was interested in. The SilicoLife contract includes a term providing that its terms are confidential. The contract was also amended on a number of occasions in the years after it came into force.
102. From 2012 to 2014 the work of the Sustainability Group expanded. Around 12 new staff with PhDs and post-doc experience were recruited. Although the laboratory space used by Dr Chen at the very start was very limited and was rented from a Government research institute called CPI, in the 2012 - 2014 period state of the art biosciences laboratories were established at Wilton.

103. There were also external collaborations with independent organisations including INRA in France. The relevance of INRA is that this was a connection Dr Botes made before she joined Invista. INRA's interest is in *Yarrowia lipolytica* and INRA offers licenses of its research tools which relate to that organism.
104. Two other former Oxyrane researchers joined Invista in this period. They were Dr Pienaar and Dr Haddouche.
105. The laboratories of the Sustainability Group included a gas fermentation facility. Unlike cider making, in gas fermentation the microbes consume gases. The gas fermentation work at Invista was focussed on using a microbe called *Cupriavidus necator* to grow in a gas fermentation system using "knallgas" – a mixture of CO₂, H₂ and O₂. There were few places in the world which could safely perform Knallgas fermentations.
106. The work with SilicoLife involved making a computer model of the genome and pathways in *C. necator* and investigating the introduction of known metabolic pathways to produce nylon intermediates and also the chemical isoprene.
107. In 2013 Dr Foster joined Invista as a senior biochemist and established an internal bioinformatics capability.
108. On 4th November 2013 the first amendment to the SilicoLife agreement was signed. This defined an "Invista Field of Use" which SilicoLife agreed not to work in for other companies either during the agreement or for five years afterwards. This defined Field of Use gives an insight into the research interest of Invista's Sustainability Group at the time. It is not now confidential. It is:
 - “(a) The genetic manipulation and use of microorganisms that use CO₂ (and not CO) as the primary source of carbon, that are biologically modified for an end purpose of producing linear intermediate chemicals having 5-12 carbon atoms including derivatives thereof, precursors and related products (such as amino acids, diols and lactones) primarily used for the production of nylons, including, without limitation
 - (i) 4 carbon intermediate chemicals (such as isobutene and butadiene),
 - (ii) 5 carbon intermediate chemicals (such as isoprene);
 - (iii) 6 carbon intermediate chemicals (such as hexamethylenediamine (HMD), adipic acid (AA), 6-aminocaproic acid (ACA) and caprolactam (CPL);
 - (iv) 7 carbon intermediate chemicals and
 - (v) 12 carbon intermediate chemicals for nylon (dodecanediamine, dodecanedioic acid, 12 aminododecanoic acid, and lauro lactam); and

b) using host organisms for producing any products where the host organism: i) Is a facultative chemolithoautotrophy ii) Is a facultative anaerobe iii) Utilises CO₂ as the primary source of carbon iv) Causes CO₂ fixation via the Calvin-Benson-Bassham cycle.”

109. The general wording in sub-clause (a) covers the work being done on *C. necator*. It is a microorganism that uses CO₂ (and not CO) as the primary source of carbon. The Sustainability Group were seeking to use genetic manipulation to biologically modify the organism to produce linear chemicals with 5-15 carbons and related products which are primarily used for the production of nylons. Example compounds are butadiene and isoprene. A point to note is the presence of the word “and” between limbs (a) and (b).
110. In March 2014 Dr Chokkathukalam joined the group to work on bioinformatics and computational biology. He had graduated from Bharathiar University, India in 2000 in Computer Engineering. While working on a PhD at Oxford University (awarded in 2010) Dr Chokkathukalam lectured at Oxford in mammalian biochemistry and bioinformatics. He completed post-doctoral work in 2013 and spent a year at Glasgow University.
111. In May 2014 Mr Stewart became Vice President, of Biotechnology at Invista. This role was to provide business direction to the biotechnology research and development activities. In October 2016 his role expanded to include overall leadership responsibilities for the entire business unit known as Invista Intermediates, of which the Sustainability Group is part.
112. In July 2014 support staff were recruited to take on administrative roles Dr Botes had been undertaking and her title was changed to R&D Director. Up until this time Dr Botes had been the person at Invista responsible for managing the relationship with SilicoLife. Dr Chokkathukalam took over that function.
113. In October 2014 Dr Foster became Program Manager for the Sustainability Group.
114. By late 2015 Dr Botes had become disillusioned with her work at Invista. She started planning to set up VideraBio in January 2016. The acts giving rise to this claim began.

Scope of the individual defendants’ work / Invista’s interests

115. Although the last date of employment of the last defendant to leave (Dr Chokkathukalam) was at the end of 2016, it is convenient at this stage to take stock and resolve the disputes about the scope of the work which was done while the individual defendants were employed and the nature and scope of Invista’s interests. One aspect is to examine what was in the public domain. The issues about the scope of Invista’s interests and the work of the Sustainability Group relate to:
- i) *C. necator*
 - ii) *Y. lipolytica*

- iii) Isoprene, isoprenoids and related compounds (including Lycopene)
- iv) Processes
- v) Other compounds– Biotin, fatty acids, methyl methacrylate, pregnenolone, steroids, nootkatone etc.

116. Taking each in turn:

C. necator

117. The impression which Invista sought to create in evidence at the interim stage was that prior to its interest in *C. necator*, it was a “non-model” organism and its use as a host had been “extremely limited”. In fact *C. necator* is a well-known bacterium in biotechnology and has been since well before 2010. Professor Sinskey explained it had been used in Russia “during the Sputnik era”. The former name of *C. necator* was *Ralstonia Eutrophia*. The Professor accepted that it was well known as a potential host platform for the production of biofuels and other chemical compounds. The idea of using *C. necator* as a host platform on which to carry out metabolic engineering with a view to making useful compounds based on gas fermentation was well-known. It was an active area of research among various groups. It was not a secret at any material time. Professor Sinskey’s evidence at trial falsified the impression Invista had sought to create in its interim evidence.

118. *C. necator* was Invista’s preferred host organism for the work of the Sustainability Group. The reason was its well-known ability to grow on carbon dioxide which meant it used a sustainable source for carbon. This was certainly in the public domain by 2016, for example a paper by *Grousseau et al* (lead author Prof Sinksey) published in 2014 (Appl Microbiol Biotechnol, DOI 10.1007/s00253-014-5591-0) examined the production of isopropanol using an engineered strain of *C. necator* as the bioproduction platform. The first three sentences of the abstract are:

“Alleviating our society’s dependence on petroleum-based chemicals has been highly emphasized due to fossil fuel shortages and increasing greenhouse gas emissions. Isopropanol is a molecule of high potential to replace some petroleum-based chemicals, which can be produced through biological platforms from renewable waste carbon streams such as carbohydrates, fatty acids, or CO₂. In this study, for the first time, the heterologous expression of engineered isopropanol pathways were evaluated in a *Cupriavidus necator* strain Re2133, which was incapable of producing poly-3-hydroxybutyrate [P(3HB)]. These synthetic production pathways were rationally designed through codon optimization, gene placement, and gene dosage in order to efficiently divert carbon flow from P(3HB) precursors toward isopropanol.”

119. In the Sustainability Group Dr Chen worked on engineering a *C. necator* strain to produce isoprene. The primary purpose of this exercise was to demonstrate the capabilities of the group. By the time Dr Chen left or shortly afterwards, the Sustainability Group had obtained isoprene made by *C. necator* in the laboratory.

120. In my judgment this sort of work is likely to have generated information which can properly be called trade secrets. They would be the particular details and combination of details relating to experiments which Dr Chen and the other staff at the Sustainability Group put together to turn the general idea of engineering a microbe to make a small molecule into a specific experiment whereby a particular strain of *C. necator* has been successfully engineered to produce a particular compound (isoprene) in particular circumstances.
121. Dr Botes said that the approaches used by Invista were in the public domain and were proprietary to Goodyear/Danisco. No doubt the general approaches are but her evidence was not addressed to the specific experimental details of what Invista actually did. Dr Chen did address the matter more specifically, explaining that the specific strategy he followed was to design plasmids and engineer *C. necator* to overexpress genes encoding limiting enzymes in the native MEP pathway and isoprene synthase and expressing the heterologous MEP pathway to increase the formation of IPP and DMAPP. He also explained that these strategies are extensively documented and reviewed. He was not challenged on this evidence but again it does not follow from it that the very specific details associated with the particular experiments did not generate trade secrets. The paper Dr Chen cited in his evidence [C1/415] for the strategy relates to metabolic engineering to make isoprene in microbes generally, it does not relate to *C. necator*. There is no evidence to which my attention was drawn that the specific combination of details of the isoprene *C. necator* experiment were in the public domain.
122. Both sides take their case on this too far. At times the defendants' case seemed to involve the proposition that despite 6 years of research and development Invista had acquired no trade secrets at all. I reject that. Invista plainly had accumulated a substantial body of trade secret information. It all related to the use of biotechnology to try to make chemical intermediates. A lot of it will have arisen from the work on *C. necator*. The fact *C. necator* might have been an obvious host to use for this purpose (if it was) does not mean no trade secret information was produced. The defendants also belittled the amount of isoprene which the engineered strain of *C. necator* had been able to produce by the time Dr Chen left. That is another bad point. Early experiments often produce small amounts. Moreover there was evidence that the quantity actually produced had been regulated to fit in with the nature of the experiment, which is entirely plausible. I reject the submission (if made) that this work was useless or showed some inadequacy in the efforts of the Sustainability Group.
123. Another way of gauging the work done was that numerous patents were filed in Invista's name based on the work done in the Sustainability Group. All three individual defendants were named inventors. Before a new invention is patented and published, that invention is a paradigm example of a trade secret. Many patents are invalid and for some that is because in fact the invention was well known, but the filing of patent applications on the scale it was done in this case is evidence that research work of the kind which generates trade secrets was being done. Of course once those applications are published, the contents are no longer confidential but that does not undermine the general inference being drawn about the nature of the work. In any case not every patent application is published. Some are withdrawn.

124. However Invista's case also goes too far. Just because some very specific information of the kind I have described will have been generated, it does not follow that the general idea of doing this is a trade secret. It is not. The kind of trade secret information which I have acknowledged will have no obvious value to someone seeking to take the well known approach and apply it to a different task. In my judgment, absent cogent evidence (which Invista did not advance), the trade secrets I have acknowledged which are associated with engineering *C. necator* to make isoprene would have no real value to someone who wanted to engineer an entirely different organism, say *Y. lipolytica*, to make a different compound. That is so (in the absence of specific evidence) even if that compound can be said to fall within the isoprenoid family.

Y. lipolytica

125. Although, contrary to an early pleading from Invista, it was never Invista's "primary" host, the Sustainability Group did do some research and development work looking at *Y. lipolytica*. Some of the early work done with SilicoLife involved *Y. lipolytica*. Dr Botes did not deny that Invista had used *Y. lipolytica* as a host, what she did deny however was that Invista had any confidential information relating to the host itself. In my judgment the work Invista did with *Y. lipolytica* will in all probability have generated some trade secrets of the kind I have discussed above in relation to *C. necator*. However no particular trade secrets relating to *Y. lipolytica* have been identified or drawn to my attention. In Invista's written closing (paragraph 87) the point is made in the context of *Y. lipolytica* that both VideraBio and Invista "used the same p450 enzyme" by reference to an April 2017 document describing VideraBio's work on terpenoids and a reference to an Invista US patent application. I do not believe the patent application was put in evidence but I followed up the reference provided. The application was published in 2013 (naming Dr Botes as one of the inventors). It demonstrates that the idea of using *Y. lipolytica* and the enzyme family cytochrome p450 was not a trade secret nor was it confidential at all in 2016, nor was the idea that Invista might be interested in it. Quite the opposite.

Isoprene, isoprenoids and related compounds (inc Lycopene)

126. Isoprenoids and terpenoids are a wide class of compounds which bear some structural relationship to isoprene. Calling them isoprene derivatives is apt to mislead and Prof Sinskey agreed that isoprenoids are not made from isoprene (despite a suggestion to the contrary by someone else at one stage at trial). Invista did work on producing isoprene (see *C. necator* above). The strain engineering group's work included some work on lycopene, which is an isoprenoid and was used as a reporter of flux through the isoprene pathway. Invista did not work on other isoprenoids or terpenoids. The suggestion that Invista is a major player in the isoprene derivative market is wrong. A different point is that it is possible to conceive that the work Invista has done on *C. necator* and isoprene might have provided a basis for further research and development to modify and adapt that system in order to make other compounds such as isoprenoids. However that work is a long way off.

Processes – fermentation, whole cell biocatalysis

127. Whole cell biocatalysis refers to a process in which the microbe produces an enzyme which converts a starting material into a product. The starting material may be a

relatively complex compound already. This biocatalysis can be contrasted with an overall fermentation approach, in which the microbe makes the desired product starting from its usual feedstock. Engineering a strain to carry out biocatalysis may well be a step on the way to engineering a wholesale fermentation approach. Gas fermentation is a particular kind of fermentation. At a high level all these processes were things in which Invista were interested at the time.

Other compounds

128. The following compounds mentioned at trial were not worked on or a target of Invista at the material time: biotin, monofunctional fatty acids (Invista did work on difunctional molecules since they are needed for polymerisation to nylon), pregnenolone and other steroids, glycoproteins, nootkatone. As far as general classes are concerned, no work was done on agricultural products. On healthcare products, no work was done although certain Invista patent applications considered them. On methyl methacrylate, I am not satisfied Invista worked on it while any of the individual defendants were employed. On dicarboxylic aromatics, Invista has a business in dicarboxylic aromatic polyester thermoplastics but the defendants have done nothing relating to that.

The acts complained of

129. Before any of the individual defendants left Invista and throughout their period of employment, work files and emails were on the defendants' home devices. Dr Chokkathukalam said that working from home by sending emails to home addresses was accepted practice and it was only in the fourth quarter of 2015 during a technical review meeting that the employees were told to avoid sending work home by email. I accept his evidence. There was also evidence that Dr Foster did the same thing. The fact the matter was raised shows that Invista was aware of the practice. I find that any file which is Company Property or contains information confidential to Invista (including trade secrets) and which was put on one of the defendant's home devices before the end of 2015, was there with Invista's tacit consent and knowledge. The large majority of these documents were deleted. I find that there is nothing sinister about the deletions.
130. In January 2016 Dr Botes started preparatory work to launch a business called VideraBio.
131. The earliest document is an email from Dr Botes to Simão Soares of SilicoLife on 1st February 2016 referring to productive discussions they had had having met at a conference in London. Mr Soares replied to both Dr Botes and Dr Chokkathukalam on their personal email accounts stating that it was a great pleasure to meet both of them "for the kick off of this exciting project". He asks to let him know when they will start exchanging ideas. It is clear that by this stage Dr Botes at least has had the idea of setting up a business away from Invista which will use SilicoLife's retrosynthesis services. Strikingly on the same day Mr Soares was emailing Dr Chokkathukalam on his Invista email account discussing amendments to the Invista – SilicoLife contract.
132. A new venture business plan was passed from Dr Botes to Dr Chokkathukalam and Dr Haddouche (then an Invista employee) in an email on 7th February. The plan

describes work on metabolic engineering. A team of biosciences professionals is mentioned (unnamed) and the possibility of consulting work or setting up a company. The document refers in completely general terms to “chassis” organisms and to the rational selection and design of the best combinations of feedstock, production host, metabolic pathway and product. No specific feedstock, production host, metabolic pathway or product is mentioned. “In silico” computer based techniques are also referred to in general terms. Later in February there is an email from Dr Chen to Dr Chokkathukalam in which Dr Chen has proposed various host organisms to consider including *Y. lipolytica* and *Rhodopseudomonas palustris*.

133. By 16th February it is clear that Dr Chokkathukalam has set up a VideraBio file-sharing portal called OwnCloud to facilitate the exchanges of information about the new project. The users include Dr Botes and Dr Chen. In the email Dr Chokkathukalam states “We will now call our new venture VideraBio”. By 22nd February Mr Soares and another SilicoLife employee have also been given usernames and access to the VideraBio file sharing platform. Files are uploaded to it.
134. Dr Botes gave her notice on 10th March 2016. On 4th April 2016 she sent an email to her personal account attaching a password protected document “doc1.docx” Particulars of Claim p26).
135. By this stage VideraBio was not a functioning business but fairly full business plans had been developed. A business plan dated 21 March 2016 is a full 30 page document drafted by reference to the fifth defendant company. It contains a “document control” section which states that the first version was made on 1st February 2016. The executive summary states that VideraBio Ltd is a start up biotechnology company seeking £5 million funding. The company plans to exploit next generation technology in the design and construction of Synthetic Biology systems for the production of bio-based products. Dr Botes is identified as one of the founders along with Dr Mitra and Dr Steven Pearson. Dr Chokkathukalam and Dr Chen are named as part of the team although elsewhere only Dr Botes and Dr Mitra are named as employees.
136. The business plan refers to core competencies, the first being “Industrially relevant microbial production platforms underpinned by refactored metabolic models reflecting the production process”. This is a reference to the kind of work done by SilicoLife in the context of metabolic engineering. Further on the same page (internal p12) there is a reference to scalable platforms (3 microbial chassis initially) which will allow flexible and sustainable production of multiple products from a wide range of feedstocks (C1 feedstocks, industrial waste streams, organics acids and sugars). There is a market analysis which refers to the size of the global bioinformatics market in the billions of dollars. A business strategy section refers to a three-year objective of defining an in-house pipeline of target product classes including flavours and fragrances, therapeutics and chemical scaffolds (internal p71).
137. Dr Botes’s last day working for Invista was 14th April 2016. She also became a director of the fifth defendant company during April 2016. The date this happened is not clear. I assume she sought to arrange things so that it was after her employment ended. The fifth defendant had been incorporated in January 2015 as a vehicle for Dr Mitra to provide consultancy services to CPI. On 18th April 2016 Dr Botes, the fifth defendant and CPI signed a secondment agreement for her to work part time for CPI

using the fifth defendant as the vehicle for that. Dr Botes also did other things. She provided consultancy services to third parties. The earliest example in evidence was in May 2016 when she dealt with a company called ZuvaSyntha.

138. In April / May 2016 the discussions between Dr Botes and SilicoLife intensified. Non-binding draft heads of terms were agreed on or about 6th April 2016. This document is one of the ones on the shared Owncloud drive which was accessible from Dr Chokkathukalam's work computer.
139. The Heads of Terms describe VideraBio as a new biotechnology company to work in metabolic engineering and that SilicoLife will collaborate with VideraBio to provide its services. VideraBio and SilicoLife will be jointly responsible for grant applications. Adriana Botes will represent VideraBio and Simão Soares will represent SilicoLife during phases 1 and 2 of the collaboration. In those phases SilicoLife will be responsible and lead the following:

“Curation of genome scale models of *Yarrowia lipolytica*, *Bacillus megaterium* and *Rhodopseudomonas palustris*, design of alternative pathways to selected products, design of metabolic engineering strategies to optimise product yield in the respective hosts.”
140. The Heads of Terms also provide for an exclusivity arrangement whereby VideraBio and SilicoLife will work exclusively with each other to pursue the objectives of the collaboration for the next 18 months.
141. There was a meeting at Dr Botes's farm house on 10th April 2016 with SilicoLife. There are two versions of meeting notes from the meeting. The notes state that the attendees were Dr Botes, Dr Mitra, Dr Pearson and Mr Soares but they also state that other members of the VideraBio “technical team” joined as well. One of those persons was Dr Chokkathukalam. Dr Chen's position was that he had visited Dr Botes's house the day before (9th April) and had met people there but he was adamant he was not present on Sunday 10th April because he was taking his son to school. I do not believe it matters but in case it does, my findings of fact are that Dr Chen was not present on the 10th but he did meet Mr Soares the day before when he (Mr Soares) was having a discussion with Dr Botes.
142. The second version of the meeting notes has a slightly fuller account of the host organisms and target products which were discussed. The relevant text is:

“The attendees were joined by members of the VideraBio technical team and discussion continued on the proposed host and product targets. Three potential hosts producing different classes of products and specific product targets were discussed. Hosts include *Yarrowia lipolytica* (steroid hormones & proteins), *Bacillus megaterium* (steroid hormones and proteins) and *Rhodopseudomonas palustris* (terpenoid derived products). Products for (1) nutrition/healthcare (steroid hormones such as pregnelone and derivatives), (2) natural products derived from terpenoid and cannabinoid pathways, (3) Agri (Plant microbiome), and potentially protein expression applications

were discussed. AB (and the team) is currently performing technical and commercial investigations and due-diligence on the proposed targets with a view to the submission of 3-5 patent applications within 3 months. AB will summarise the host and product targets for SilicoLife. The attendees discussed obtaining the product ‘wish list’ for selected companies including but not limited to Croda, Unilever, Akzo Nobel and P&G.”

143. In any event on 15th April Mr Soares told Dr Botes that SilicoLife was prepared to agree with the plan to join VideraBio. A draft contract was drawn up.
144. At some point just after this there was a realisation that the exclusivity terms in the Invista - SilicoLife contract may not permit SilicoLife to do this work with VideraBio. There is an email exchange on 7th May 2016 between Dr Botes, Dr Mitra and Steve Pearson. A copy of a Powerpoint presentation with the title “Steroids Platform” was sent between these three individuals. The slides show some more detailed thinking about processes, products and strains. They include biotransformation (in effect biocatalysis) from sterols from vegetable and animal sources into steroid products such as pregnenolone naming particular strains of *Y. lipolytica* and *R. palustris*. There is a terpenoid platform based around using CO₂/glycerol/plant or animal waste with *R. palustris* to make a range of terpenoids. 40 are named (one is lycopene).
145. In the email exchange about this set of Powerpoint slides there is an email from Dr Mitra (using Dr Botes’s account) to Dr Pearson which includes the following:
- “I’ve got it on a USB as enclosed.
- Until we have seen the contract between SilicoLife and Invista, please do not share this outside the three of us.”
146. The three “of us” are Dr Mitra, Dr Botes and Dr Pearson. This certainly shows that they were becoming concerned about the terms of the relationship between SilicoLife and Invista.
147. The next email simply says “oops”. In my judgment there is nothing sinister about the word “oops”. All it indicates is that the earlier email did not attach the Powerpoint slide and, as many people conventionally do, when the slip is realised another email follows enclosing the attachment with the words “oops”.
148. Putting it neutrally, by an email on 18th May 2016 Mr Soares at SilicoLife sent a copy of the Invista - SilicoLife contract, including the amendments, to Dr Botes, Dr Mitra and Dr Pearson at VideraBio. The email states “Please find attached the contracts to be evaluated, please do not share them. The right of first refusal is defined in the 1st amendment to the research agreement.” That act was a breach by SilicoLife of its contract with Invista because the contract makes itself confidential. I will address that in detail below.
149. A debate at one stage in these proceedings was whether SilicoLife would have been in breach of exclusivity / first refusal provisions in the Invista - SilicoLife contract if this relationship had gone ahead. Part of this was concerned with the scope of the defined

Field of Use in the first amendment to the contract. The question was whether the organism *R. palustris*, which is mentioned in various VideraBio / SilicoLife discussions, was within that Field of Use. Mr Stewart and Dr Foster said it was. Dr Foster said that like *C. necator*, *R. palustris* is “an aerobic chemolithotroph that utilises the Calvin-Benson-Bassham metabolic cycle and can “fix” carbon into complex organic molecules using carbon dioxide as a possible raw material.” Those terms come from part (b) of the Field of Use definition. Dr Botes originally did not accept it was within the scope. However in cross-examination Dr Botes accepted that *R. Palustris* is capable of functioning in that manner although apparently it is also capable of behaving in a different way. The other basis on which Dr Botes did not accept it was within scope was due to the existence of the “and” between parts (a) and (b) in the definition. I do not believe this now matters since this is not said to amount to the procuring of a breach of contract. However if a finding is required, I find that the clause should be read disjunctively and *R. Palustris* is an organism within part (b). Therefore working on it would be within the Field of Use irrespective of the product.

150. In any event, the defendants and SilicoLife did not take a relationship any further forward. That was due to SilicoLife’s contractual obligations to Invista.
151. Between 16th June and 28th July 2016 Dr Chen sent four emails from his work email to his personal email address(es). They include sequences of DNA primers, genes and a plasmid pBBR1. Dr Chen is a passionate scientist. He did a lot of work at home for his employer throughout his employment with Invista. He deleted them from his personal devices and accounts in June / July. There is no evidence to which my attention has been drawn that this was anything to do with VideraBio and not just something Dr Chen did in the ordinary course of his employment. He deleted them because he thought that was the right thing to do. He did not delete them to conceal anything.
152. Dated 5th July 2016 there is an email exchange between Dr Mitra and Dr Chokkathukalam in which Dr Chokkathukalam answers a technical question posed by Dr Mitra concerning pathways and enzymes in an organism called *Rhodococcus*. The question has something to do with a company called Biome. Dr Mitra says it should be possible to pay him for the work. Invista inferred this was an example of Dr Chokkathukalam working for and being paid by VideraBio while still employed by Invista. Dr Chokkathukalam’s evidence, which I accept, is that he refused payment. He said that Dr Mitra told him this work was for CPI and the relevant data was CPI data. There is no reason to doubt that. Dr Chokkathukalam characterised this as just helping a friend.
153. On 21st July 2016 Dr Botes filed a patent application relating to the use of microbes in the genus *Clostridia* to produce acetaldehyde from syngas (which is a fuel gas containing hydrogen and carbon monoxide). At one stage in these proceedings Dr Botes understood that Invista claimed ownership of that application. Dr Botes’s position is that she filed this application more than three months after her employment ended. Whatever the rights and wrongs of that dispute, it is no longer in issue and I do not have to resolve it.
154. At some time starting in the summer of 2016, which I infer was also after Dr Botes perceived the three month period after her employment had ended, Dr Botes filed grant applications relating to projects in which she intended the VideraBio business

would participate, possibly with CPI. One application was about a project to engineer strains of *Y. lipolytica* to produce the terpenoid compound nootkatone (which is a relatively high value fragrance and flavour compound) by biocatalysis from a compound valencene. If successful this work may have led to the possibility of making nootkatone based on fermentation (not gas fermentation). Another application filed by Dr Botes was to produce fatty aldehydes in *Y. lipolytica*.

155. On 28th July Dr Chen gave his notice to Invista. He was asked to stay on and did not leave immediately.
156. In August 2016 the fifth defendant registered VideraBio as a business name.
157. On 5th August 2016 Dr Chen was locked out of Invista and told to go home without further notice. He did not return save for his exit interview in October. Over this time Dr Chen looked for other jobs. He says he was asked by a recruiting agency whether he was one of “the naughty ones who had stolen Invista’s IP”. I accept his evidence.
158. At some point prior to 31st October and while he was still employed, Dr Chen deleted many documents on his home computer which had been put there while he was employed. Many of them are now admitted to be Invista Company Property. In my judgment Dr Chen was not doing this to conceal what he thought was wrong doing, rather it was because he thought he was supposed to do it.
159. 31st October 2016 was Dr Chen’s last day as an employee of Invista and the next day he started working for VideraBio. From then until May 2017 he worked at home for VideraBio. The work seems to have been on *Y. lipolytica* and in January 2017 Dr Chen went to the INRA laboratory in France to learn more about that organism.
160. Meanwhile on 28th October Dr Chokkathukalam gave his notice to resign from Invista.
161. Between 15th and 17th November 2016 Dr Botes gave a presentation to biotechnology students. The slides are referred in this case as the CBMNet slides and are addressed below.
162. 28th November 2016 was Dr Chokkathukalam’s last day at Invista. After that he went to work for Vianet.
163. The claim form in this action was issued on 22nd February 2017.
164. Proceedings were served at Dr Chen’s home on 22nd February 2017. When the materials were delivered he was out and his wife received them. When he returned his young children asked him if he had done anything wrong. He was shocked. There were still several thousand documents on his home computer which had got there while he was employed by Invista. Most but not all of them are the scientific papers making up the Chen Library. Dr Chen deleted them. They were recovered by the forensic process in these proceedings.
165. That concludes the narrative of what happened.

166. I turn to deal with three matters. First, sending emails from work to home in 2016. It is not clear to me if any other examples of this are relied on save for the four Dr Chen emails in June/July, which I have dealt with. If it did happen it was on a small scale and not sinister. Throughout the period of his employment Dr Chen downloaded thousands of documents at home which form the Chen Library. I deal with that and with the VideraBio documents below.
167. Second, at this stage it is convenient to summarise what work VideraBio undertook or was proposing in the relevant period. The longest way of looking at the relevant period is from January 2016 until the end of February 2017, 3 months after the end of Dr Chokkathukalam's employment.
168. VideraBio proposed essentially to carry out research and development in the field of metabolic engineering of microbe strains to produce chemical compounds. There were some others but the main organisms VideraBio was interested in were *Y. lipolytica* and *R. palustris*. VideraBio had no interest in *C necator*. In terms of work which was actually done in that period as opposed to proposals, the only strain worked on was *Y. lipolytica*. The processes considered included biocatalysis and fermentation but not gas fermentation. The *Y. lipolytica* was to grow on hydrophobic (oil based) feedstock whereas Invista's *C. necator* grew in a gas fermentation system. The products VideraBio was proposing to make were high value low volume products such as nootkatone. They were not intermediates to be used on an industrial scale to make nylon.
169. Third, the relationship between VideraBio on the one side and Dr Chokkathukalam and Dr Chen on the other. Dr Chokkathukalam said in evidence that he was never employed by VideraBio – which I accept. However he sought to minimise his involvement in early 2016 and generally characterised it as just helping his friends. I am sure that was his motivation but I reject the suggestion that somehow that means he was not as responsible as Dr Botes or Dr Chen for what went on in the period from February to at least May or June 2016. Dr Chokkathukalam knew that what was being discussed was a project to set up a distinct business, independent of Invista and he was fully involved in that effort at that time.
170. As regards Dr Chen, he was also fully involved in VideraBio at the time.
171. I do not believe it matters but I accept that neither Dr Chokkathukalam nor Dr Chen were employed by anyone other than Invista prior to the date they left their employment.

Assessment

(i) Confidential information

172. In this section I deal with the position of an individual defendant after termination of their employment. Clause 1.2 imposes a restriction on the use by the individual defendants of “any confidential information or trade secrets concerning the business of the Employer or in respect of which the employer may be bound by an obligation to any third party” following termination.

173. The defendants contend that this clause is unreasonable and goes beyond what is required to protect the Invista UK's legitimate interests, as it seeks to prevent the individual defendants from using information which is part of their general knowledge, skill and experience, and seeks to prevent the individual defendants using "mere confidential information" (rather than just trade secrets or confidential information akin to trade secrets). The defendants also say that the scope of the information captured by clause 1 is too uncertain to be enforceable.
174. Invista asserts that the restriction in clause 1 is reasonable (and therefore enforceable) as it pertains to confidential and proprietary documents belonging to Invista created during the course of the individual defendants' employment.
175. Turning to construction, "confidential information" is defined in clause 1.1 in a very wide and uncertain manner. The words at the end of 1.1 provide that it "includes but is not limited to" certain things set out in the sub-clauses. The definition in sub-clause 1.1.2 will cover ideas and techniques which form part of an employee's skill and experience. The definition in sub-clause 1.1.7 includes any document, irrespective of its content, which is marked confidential. There is nothing in 1.1.7 which provides that it only applies if the content of the document is not in the public domain. By contrast sub-clause 1.1.2 includes a provision that that sub-clause is limited to information which is not available to the public generally. Since those words are not in the other sub-clauses, I find that they are not limited that way.
176. Not relevant to construction of the words of the contract, but as an illustration of their effect, a number of documents at trial bore an Invista confidential stamp which contained no non-public information at all. One I noted was a map of the world with the locations of Invista's sites marked on it.
177. Considering Invista's interests, as I have held, its Sustainability Group did and does have genuine trade secrets. However this clause 1.2 is far wider than reasonably necessary to protect those trade secrets. Sub-clause 1.1.2 is itself much wider than reasonably necessary to protect those trade secrets. A clause limited to "trade secrets" expressly or using some other wording like that could be reasonable, but these provisions are not written that way.
178. I find that this clause as a whole and sub-clause 1.1.2 are an unreasonable restraint of trade and unenforceable after termination of employment. I am not aware of any way of severing the words which would cure the problem.
179. There is no dispute that the individual defendants will have owed a non-contractual duty of confidence to their employer after they left. That is the only enforceable duty of confidence they owe their employer after employment. For the sake of clarity, I will refer to the kind of information protectable by that non-contractual duty as "trade secret type information". That is not meant to be a finding that the duty is strictly limited to trade secrets as opposed to anything else. It is intended as a convenient shorthand to avoid lengthy phrases like "information protectable after employment by a non-contractual duty of confidence". The term was not used at trial but I will refer to a party's submissions as if it was.

Misuse of confidential information

180. The only instance of what Invista called evidence of post-employment misuse of trade secret type information relied on in closing was the CBMNet slides. Before dealing with those slides there are a number of other issues to address.
181. First, aside from the CBMNet slides, there is no other evidence of an act of post-employment misuse of trade secret type information or of a threat to carry out such an act by any defendant.
182. Second, the document called doc1.docx was put in cross-examination on the footing that it contained trade secret type information. This is the document Dr Botes disclosed pursuant to the first consent order. The document includes information about the contents of unpublished patent applications. Unpublished patent applications themselves, as full technical documents, can consist of valuable trade secret type information both in terms of their technical content and as an (as yet unpublished) indication of a commercial research group's focus, but the information in the doc1.docx document was very sparse indeed and I am sceptical that it did in fact contain such information.
183. However even if the document did contain trade secret type information, there is no evidence Dr Botes opened the file or used or read its contents after her employment. The document was encrypted. I accept Dr Botes's evidence that it was encrypted by her because she thought her employer required that. I also accept that she had forgotten the password. I am not satisfied that this document or what Dr Botes did with it (which was essentially keeping it in encrypted form), amounts to a misuse of trade secret type information.
184. Third, there were other documents said at one time to involve trade secret type information (the Chen email documents) but the point was not pressed. I am not satisfied those documents fall into that class.
185. Fourth, admissions were made that certain documents were or comprised confidential information. In his 5th witness statement, Invista's solicitor Mr O'Rourke states that 362 documents were admitted to be "confidential information". Despite the discrepancy of 1, that seems to be the same as the 361 said to be admitted "confidential information" in the Master Documents Spreadsheet. However as used in the admission the term "confidential information" is defined in the second consent order. That is the wide definition used in the employment contracts. It is much wider than trade secret type information. I am unaware of any attempt to show that these documents comprise trade secret type information.
186. Turning to the CBMNet slides, between 15-17th November 2016, well after she had left Invista, Dr Botes made a presentation to biotechnology students on the topic of systems metabolic engineering. Amongst the slides she used was one which summarises how to apply this approach to construct industrial microbial strains. The slide ("the CBMNet slide") is concerned with criteria for selecting a host organism to produce bulk chemicals from low cost feed stocks. This is summed up by the phrase "host selection needs analysis" which appears in the centre of the slide. Around this central phrase are a series of boxes containing text and then further text relating to the box on the outer edge of the slide. For example one box reads "Tolerance to target product" and then the text on the edge reads "requires evaluation". On other words

one must check that the organism can tolerate the target product which it is going to be engineered to make.

187. There seem to have been six versions of the slide but the differences between them were not significant and only one of them was focussed upon. The CBMNet slide is very similar (but not identical) to equivalent slides Dr Botes herself prepared while still working at Invista to convey the same information to an internal meeting. There were multiple versions of the earlier slide too but I will simply refer to it as “the original slide”. Comparing the CBMNet slide and the original slide, the organisation of the information is the same as each. The various passages of text convey the same sense in each slide and quite a lot of the text is word for word identical. For example the text about target tolerance is identical. However this is not a copyright case.
188. Invista contends the original slide did and the CBMNet slide does embody its confidential information, i.e. trade secret type information. By the trial itself Invista had abandoned a previous claim that the individual text boxes themselves amounted to confidential information but maintained that the compilation of that information was confidential information, i.e. trade secret type information. Invista also contended that Dr Botes had breached her employment contract by making the CBMNet slide because in order to make it she had misused company property, the company property concerned being the original (Invista) version of the slide. At one stage it seemed that Invista’s case also involved the suggestion that Dr Botes had used a copy of the original slide which had been found in the forensic analysis of the defendant’s devices. However the original Invista document was on Dr Chen’s device and there was no evidence she had accessed it. I accept Dr Botes’s evidence that she did not know the original slide was there. Her evidence was that she created the CBMNet slide from memory. I will come back to that below.
189. The information conveyed by the original slide and the CBMNet slide is the same. The issue is whether it is information which a duty of confidence would protect, i.e. is trade secret type information? I accept the principle that such confidential information can consist of a compilation of non-confidential elements. However I am not satisfied this combination of those non-confidential elements is sufficient to amount to protectable confidential information. Systems metabolic engineering is a topic which the right kind of biotechnologists are well aware of. Prof Sinksey gave clear evidence about it. There are numerous published scientific papers about it. The individual elements on both slides are all well known aspects of it and they all relate to each other in an entirely conventional way. I reject the submission that presentation of the CBMNet slide in public (or its creation) amounted to a breach of any obligation of confidence enforceable post termination of Dr Botes’s employment. It did not misuse trade secret type information belonging to Invista.
190. Therefore I dismiss the case based on misuse of confidence either in contract or in equity altogether.

(ii) Company Property

191. Invista alleges that the individual defendants are in breach of clause 3 of their contracts because they have retained Company Property following the termination. This issue raises three main sub-issues:

- (a) *Do the documents constitute Company Property?* The defendants have accepted that some documents located on their devices post-employment do constitute Company Property, but not others.
 - (b) *For documents that are Company Property, were the defendants otherwise entitled to have these after the end of their employment?* The defendants rely on three arguments to justify holding on to certain Company Property at that stage. One relates to Dr Botes's patent list, one to Dr Chokkathukalam and the final argument is about the proceedings themselves.
 - (c) *What did the defendants need to do with Company Property in order to comply with clause 3?* The question here is how the clause works in relation to deleted documents.
192. Clause 3 is headed "Return of Company Property". The clause takes effect upon termination of their employment. The clause does contemplate that the employee can be required to return material earlier if requested but no such request was made in this case. The essential obligation is that the employee must return all company property (small c, small p) belonging to the employer which is in the employee's possession or under their control. No doubt the clause is focussed on possession at the point the employee leaves but common sense would suggest that if the employee later came into possession of an item of company property which was not actually in their possession on the date they left, then they ought to return that too. The obligation is to "immediately deliver" the property to the employer. Company property is defined in a cascade starting with "all property" which then includes various things. One thing included is "documents and software". That term is then given a non-exhaustive definition. The clause ends with a sentence providing that the obligation includes return of all copies of all documents and software "however stored or made". Those words make clear that an electronic copy of a document is covered by the obligation to return. The final sentence also refers to drafts, reproductions and other things which are derived from documents and software. It is convenient to refer to everything covered by the obligation to return as Company Property. There might be scope in the way the clause is drafted to take a different view but nothing turns on that. The term "Company Property" is convenient although it is only used in the heading.
193. The issues I have to decide related to the concept of Company Property as it is defined in the contract. What falls within it and what an individual defendant's obligations are related to it are defined in the contract. This issue is not concerned with the general law of property in chattels nor with the general law of conversion and the like. So, for example, whatever the general law says about an electronic file being property does not matter because the questions here are decided by reference to the contract.
194. The documents to be considered are:
 - a) The CBMNet slide
 - b) The VideraBio documents, Dr Foster's Schedule 11C
 - c) The Chen Library, Dr Foster's Schedule 9

- d) Dr Chen's "competitor searches"
- e) The patent list

195. Invista says these are all Company Property, the defendants disagree. There is also a sixth group of documents, these are emails of Dr Chokkathukalam which are admitted to be Company Property however Dr Chokkathukalam contends his retention of copies of them was not a breach of his employment contract (it is not said to be a misuse of confidence) because they were relevant to an ongoing grievance procedure and employment tribunal claim he made against Invista.

(a) *CBMNet slide*

196. Invista asserts that the CBMNet slide (in all six incarnations) is Company Property [Closing paragraph 67]. Invista's case is:

"68. These slides closely track work performed by [*Dr Botes*] whilst she was an employee of Cs. [*Dr Botes*] says the original INVISTA slide is "ingrained in her memory" and that she reproduced it without a document to copy from. However, that is simply not credible, particularly in view of the use of exact words, phrases, and even whole sentences. Professor Sinskey suggests that in his field, the Botes Slide would be considered as plagiarism.

69. The use of the slide in a further presentation is simply taking Cs' work, worked on by [*Dr Botes*] whilst she was an employee of Cs. It must be returned. It is properly property belonging to Cs. It is also, at the very least, a document derived from Cs' Company Property, and therefore, is INVISTA Material as defined under the Second Consent Order and subject to the return obligation agreed to by [*Dr Botes*] pursuant to that Order."

197. I set this out because while I understand the rhetoric, I do not find Invista's case easy to understand.

198. In my judgment Dr Botes's evidence that she created the CBMNet slide from memory is not at all incredible. There is a lot of identical wording between the CBMNet slide and the original slide but given the subject matter and the fact it is a core part of Dr Botes's expertise, the similarities do not cause me to doubt that she created the CBMNet slide from memory. If the latter document was created simply by having a copy of the original slide in Dr Botes's possession the changes do not make sense. In the original the words in a box "Carbon source versatility to exploit low cost feedstocks" appear whereas in the CBMNet slide what is clearly the same idea is conveyed by "Feedstock flexibility". That change could be explained as to make the text shorter but if that was the intent why alter "Host phenotype exploitation" (original) to "Phenotype characteristics that can be exploited" (CBMNet slide). None of this was explored in evidence.

199. I find that Dr Botes did not have in her possession or use a copy of the original Invista slide when she created the CBMNet slide. She created the CBMNet slide from memory. Moreover she did so after her employment ended.
200. As for plagiarism, no doubt if one academic had created the original and another copied it to create the CBMNet slide then, as Prof Sinskey said, that would be considered as plagiarism. This emotive term does not equate to copyright infringement nor to misuse of confidence.
201. The core allegation by Invista in closing is that the “use of” the original slide in the CBMNet slide is “simply taking Cs’ work”. However as mentioned repeatedly already there is no claim for infringement of any copyright work, and the claim based on misuse of confidence has been rejected. So the CBMNet slide does not take any work of Invista’s which is protectable at law. Even if, contrary to my finding of fact, Dr Botes did have a copy of the original slide in her possession and read it in order to make the CBMNet slide, all that would do is establish Dr Botes was in breach of contract for failing to return the original slide. Invista’s case seems to be that using the original slide as a source for the information contained in the CBMNet slide, the CBMNet slide becomes Invista property even though the person who created it was not an employee when they did so. I do not accept that. Even if the CBMNet slide falls within the scope of “reproduction” within clause 3, for that clause to turn the CBMNet slide into Invista property by an act of derivation undertaken after the employment ended would mean the clause has some quasi-copyright effect and would engage the restraint of trade principles. I doubt a restraint of trade which purported to prevent using information in a manner which neither infringed copyright nor breached confidence would be reasonable.
202. Finally a point was made that the CBMNet slide is “Invista Material” within the second consent order and should be returned. Invista’s case on this is that the extended definition of Invista Material brings the CBMNet slide within its ambit even if that slide is not Company Property. I accept that is arguable, but I will not decide the point because this is the trial, it is not an application to enforce that interim order. Interim orders frequently and for good reason will require a party to do or not do something defined in a simple way which is not precisely co-extensive with the relevant substantive legal rights and obligations. This trial is concerned with the substantive legal rights.

(b) The VideraBio documents, Dr Foster Schedule 11 C documents

203. The documents in Dr Foster’s Schedule 11C are documents created by the individual defendants while they were still employees of Invista but as part of the process of setting up or at least planning to set up VideraBio. As far as the individual defendants were concerned they were not doing this as employees of Invista because VideraBio was something distinct from Invista. For the purpose of this analysis I will assume that it was a breach of their employment contracts for them to do this at the time because VideraBio was or would have been a “Competing Business” and so the creation of these documents was part of acts which were a breach of contract.
204. Invista contends these documents are Company Property because they were created by the individual defendants in the course of their employment. I do not accept that analysis. The fact these documents were created by the individual defendants who

were employed by Invista at the time and in breach of contract does not mean they necessarily were created in the course of their employment or for their employer. It is not right that any document created during a period of employment belongs to the employer, irrespective of content or purpose of that activity. In my judgment these documents relate to VideraBio and its activities and were produced for VideraBio (whatever the legal form of that entity at the time). They were not produced for Invista and do not relate to Invista. There is no evidence that they were produced in working hours and if it was necessary to make a finding on that, I would find they were not created during working hours. The documents were stored in an OwnCloud cloud storage account which belonged to VideraBio and not Invista. Invista did have access to them only because Dr Chokkathukalam's work computer had access to the OwnCloud.

205. In the context of this argument Invista also said "see further clause 2" (claimant's closing paragraph 59). This clause relates to intellectual property. The clause does define intellectual property rights as including those created during the employee's employment but not limited to being created in the course of the employee's employment. However this clause is distinct from clause 3 and no point was developed by the claimant relating to it. If this is an argument that Company Property defined in clause 3 as having to be returned includes intellectual property defined in clause 2 then I reject that submission. Intellectual property rights are necessarily intangible and clause 2 itself deals with what is to happen about them. Clause 3 is different and is concerned with the return of tangible things (which can include electronic files).
206. I find that the documents in Schedule 11 C are not Company Property and clause 3 does not apply to them.

(c) The Chen Library (Dr Foster's Schedule 9)

207. The defendants contend that these scientific papers were downloaded by Dr Chen at home, outside his work hours, for his own professional development as a scientist, did not relate to any specific work he was doing for Invista and remained on his home computer. The defendants say that Invista's case is that these documents are established to be Company Property because Dr Chen sent copies of the literature to his work device from the originals on his home computer. The defendants argue that the court's ruling on this point will have important public policy implications because if the court rules that the originals on the employee's home computer are indeed the employer's property, then this will have serious and harmful effects on the way that scientists work. The scientists will risk proceedings of this kind unless they enforce a rigid separation between literature downloaded at home for their own interest and literature downloaded at home which is to be read or used at work. To do so would be unhelpful to their work and to their development as scientists. The defendants submit that there are no public policy considerations pointing the other way: an employer necessarily loses nothing since in this scenario it necessarily already has copies, and the literature does not relate to its work.
208. There was some evidence that some documents in the collection were only accessible by Dr Chen as a result of his employer's subscriptions with the relevant source but I did not have my attention drawn to any evidence which dealt with that in detail or

showed what proportion of the library that represented. I will not take that point into account.

209. This part of the defendants' case fails on the facts. Dr Chen accepted that the scientific papers were collated by him in the course of his employment. Dr Chen transferred copies of the scientific papers to his work computer and I find that was because he regarded them as part of his work. In my judgment, subject to the issue about deletion which I will address separately, this collection of documents amounts to Company Property within clause 3.
210. A different case could be, for example, that Dr Chen had a private subscription to a technical journal of interest to him and when reading it on his home computer he had identified one or two articles of relevance to his work and sent copies of those articles to his work computer. Then it seems to me the analysis would be that the copies of the articles on his home computer belonged to him and not his employer, while the copies on his work computer belonged to his employer. But that is a long way from the facts of this case. This aspect of the case is not about single documents, it is about a large collection of over 5,000 documents collated in the course of his employment. Such a collection itself has a value as a compilation (hence the term "library"). It was compiled by Dr Chen as part of his employment. There is nothing to stop him using his skill and knowledge to pull together another library of documents and nothing to stop that including newly downloaded versions of papers he is aware of. But that is a different point.

(d) Dr Chen's "competitor searches"

211. Dr Chen created 3 documents which have been called competitor searches. In the materials for trial the documents are in csv format, which is a form of simple database from which other programs can access data. The documents are in Dr Foster's Schedule 8 but although Invista's closing submissions on this topic refer to paragraphs 84-87 of Dr Foster's fourth statement, nothing in those paragraphs seems to relate to those three documents. As far as I am aware Dr Chen did not address them in terms and although a question was put referring to them ("patent searches" at Day 5 p162 ln17) the focus then turned to the Chen Library. As I understand it the files are output files from patent searches and the information seems to consist entirely of extracts from those patent databases, which I infer are public. The patents seem to belong to third parties and seem to be in the biotechnology field (so the first document is reference E8/51 and the first patent in that file seems to be US 7799545 B2, published in 2010 and belonging to Genomatica Inc.). The modified date for these files in the Master Documents Spreadsheet is 23rd August 2016. Therefore Dr Chen must have carried out the patent searches before he ceased to be employed but probably after he was no longer allowed back into the Invista office on 8th August. I infer these searches were done at home with a view to furthering the VideraBio project or, which is less likely but not as fanciful as it may seem given Dr Chen's interests, as a matter of general curiosity. It may or may not have been a breach of Dr Chen's obligations to his employer to undertake that exercise but even if it was, that does not make the resulting document Company Property.

(e) The patent list

212. The patent list is the document known as doc1.doc. I have rejected the claim based on misuse of confidence but another aspect is the claim based on Company Property. Dr Botes created this document while she was an employee of Invista. It is Company Property. She emailed it to her home email. The electronic copy of the document on her home email / home device is Company Property. There was a suggestion that Dr Botes admitted the document was Company Property. I remember the cross-examination on this and if I had to reach a conclusion I would say the “yes” on the transcript only signified agreement that she had sent the document to herself rather than being acceptance that it was Company Property, but it does not matter because the conclusion is not difficult to reach anyway.
213. Dr Botes argued that even if the document was Company Property she was entitled to retain it because it was meant to have been a list of Invista patents for which she was a named inventor and she was going to use the information to comply with her post-termination obligations to assist the patentee (Invista) with any formalities which required a signature by the inventor (Dr Botes) during the prosecution of the patent application through the various patent offices around the world.
214. In fact the document contained a few patents for which Dr Botes was not the named inventor. Nevertheless I accept her evidence that that was a slip. It was meant to be a list of patents naming Dr Botes.
215. However I do not accept Dr Botes’s evidence that post-termination assistance for the patentee was the main reason Dr Botes created and sent the document home. She is a sophisticated person very familiar with patents and would have known that when Invista wanted something signed by her they would give her the information she needed. The post termination assistance justification is an excuse dreamt up in these proceedings. However conversely I do not believe this is evidence of a wicked scheme by Dr Botes at all. I think Dr Botes simply wanted to have information about her Invista patents (in the sense of ones for which she was inventor) and that included the unpublished ones. She wanted to make sure she would have a record of what she had done. Most of it would be publicly available even at the time the document was created but it is much more convenient to pull it together in this way than ferret around public databases. And of course some of it was unpublished at the time albeit likely to be published. Almost all of it is now published although a very small number of applications have been withdrawn and will not be published. I am not satisfied that Dr Botes did this with a view to furthering VideraBio’s business interests or to facilitate the identification of patent whitespace rather than simply to make and retain a record of her work and experience as a scientist.
216. If in her own time she had compiled a list of her own Invista patent applications from public information then that list would not be Company Property. But that is not what happened. Nor did Dr Botes ask her employer if she could be given and keep such a list including unpublished applications. What did happen does not justify retention of Company Property.

What did the defendants need to do with Company Property?

217. The contract requires Company Property to be returned. The question is how does that apply to deleted electronic documents.

Deleted documents and clause 3

218. The various “levels” representing the different ways documents can be present on a computer have been mentioned already. The experts identified four levels of presence. Level 1 is live documents, not deleted at all. Level 2 is when a document is placed in the recycle bin or equivalent. It is common ground that documents in Level 2 are readily accessible to computer users. Level 2 is not really deletion at all.
219. Level 3 applies when the recycle bin is emptied. The files are not visible to a standard user. At this stage the document still exists on the hard drive (or other non-volatile storage medium) but the master table of the file system no longer contains a reference to that file. The storage locations where that file is stored are now available to the computer to be overwritten. Using the analogy of a physical library, at Level 3, the book is still on the shelf somewhere but the library index card for it has been removed. A new book might be placed onto the shelf in its place at any time and if that happens the old book really will have gone. The nature of computers means that files at Level 3 often remain without being overwritten for a long time. With special software files at Level 3 which have not been overwritten can be found and recovered. Unlike Level 4, at Level 3 there is still some file metadata available which may be used to recover the file.
220. Deletion to Level 4 means that the file is no longer referred to by the file system at all. The metadata available at Level 3 is no longer available. Files or parts of files may still be recovered at Level 4 but it is more challenging. To delete a file beyond Level 4 requires active effort to positively overwrite the data. At that point the data is not recoverable.
221. A number of distinct questions arise relating to deletion of electronic documents. What has to be returned to the employer is material within the employee’s possession or control. The first major question is about the scope of the words possession and control. This has to do with the status of deleted documents. The second major issue is about the meaning of the obligation to return or deliver. The question is whether deletion of a file satisfies the clause.

The scope of possession or control

222. Clause 3 applies to documents within the employee’s possession or under his or her control. It is common ground (and I agree) that this includes to any Company Property which is in the form of an electronic document and that document is either at Level 1 or Level 2 on the date of termination of the employment.
223. The issue is raised by the large number of documents on Dr Chen’s computer which were already deleted to Level 3 at the date of termination. There were 5278 such documents on Dr Chen’s devices. The same point arises on the 349 deleted documents on Dr Botes’s USB memory stick. They were also deleted to Level 3 before termination. There were also an unknown number of documents on Dr Chokkathukalam’s computer. It is unknown because he reformatted his computer.
224. The question is whether the obligation in clause 3 applied to those deleted files. Invista contends that it did because the files were retrievable in full (and have been retrieved (save for Dr Chokkathukalam)) and therefore they ought to have been

returned pursuant to clause 3. Invista's case was that this would mean, for example, that if files were held on personal devices, those physical devices would need to be provided by the departing employee to Invista so that it could retrieve any Company Property and supervise its full deletion, such that Company Property could no longer be retrieved by the departing employee upon return of their devices to them. Invista pointed out that the files could contain highly confidential and trade secret material of Invista.

225. I reject Invista's case on this aspect. In my judgment an objective approach to interpreting the words "in the employee's possession" and "under his or her control" in this employment contract do not lead to the conclusion that those words cover what was an electronic file on an employee's personal device which, by the time the question is being asked, had already been deleted to Level 3 during the course of their employment.
226. It is true that as a matter of fact the software necessary to recover data at Level 3 is accessible on the internet and, if the employee had that idea, then that software could be obtained and used by a reasonably competent computer user who wanted it. However I am not satisfied that the factual matrix against which this contract should be construed would include this possibility. In my judgment employees as a class do not know that this is something which can be done as readily as it in fact can be nor do they know that they could do it themselves. Nor is there any indication in the contract that the employer expects the employee to behave that way. The contract should not be interpreted on the basis of a common awareness by the parties that files deleted to Level 3 could be recovered by the employee. That ought to have been spelled out if it was relevant. If Invista was so concerned about its trade secrets that it wanted to impose an obligation on the employee to hand over their own devices at termination so that any deleted files could be scrubbed, the contract should have contained specific express terms to that effect. I cannot read that into clause 3.
227. There is a risk of playing with words, since Company Property is not defined. Rather than saying that a file which was Company Property before deletion ceases to be Company Property after it has been deleted to Level 3, I prefer to say that a file which was Company Property which was on an employee's device, ceases to be within the employee's possession or under their control if it was deleted to Level 3 in the course of their employment before termination.
228. Nor do I accept (if this is part of Invista's case) that clause 3 prevents an employee from deleting what would otherwise be Company Property during the course of their employment. Clause 3 is only about what an employee must do at termination (or earlier if requested). In this respect it is not concerned with the employee's day to day obligations. A deletion of an electronic file on a home computer which was Company Property and was the only copy in existence might be a breach of an employee's duty of fidelity but that is a different point.
229. A separate point concerns files which include or embody confidential information within clause 1 (or protectable in equity). In my judgment, to the extent such a file is deleted to level 3, for such information to remain on the employee's device is not a breach of clause 1.2. It is neither a use nor a disclosure of that information. Nor, for the same reason, is it a breach of any equitable obligation of confidence.

230. A different case might be if the presence of the files on the employee's private devices was itself a breach of their employment contract (or other duty) but that was not established. There was a discussion in evidence about whether use of private devices was contrary to Invista company policy and whether the individual defendants had been told that at any particular time. I am not satisfied that any files to which this question relates were present on the relevant device either in breach of company policy or in breach of the employment contract.

Deliver or return and deleting documents

231. The second major issue relates to an argument advanced by the defendants that the employee's obligation to their employer at termination of employment would be satisfied by deleting electronic files which were Company Property. That is wrong even if deletion went as far as complete erasure of the data – beyond Level 4. Clause 3 distinctly requires the employee to deliver the property to their employer. The words deliver and return appear in the clause and its heading. They are ordinary English words with a reasonably clear meaning. They are not satisfied by destroying the property. The purpose of the clause is not simply to deprive the (ex)-employee of the property. The electronic document on the employee's home computer could be the only version in existence. Deleting it without giving the employer a copy would deprive the employer of their own property. The clause has more than one purpose. One is to deprive the (ex)-employee of material which does not belong to them but another purpose is to ensure the employer has possession of the material once the employee has left.
232. What is an employee to do when there is Company Property on their home device at termination? I cannot read into clause 3 an unfettered right on the part of the employer to require that they are given the employee's physical device. One of the problems is the nature of electronic documents because delivering an electronic document to someone else usually just involves creating a copy. In my judgment the employee would satisfy the clause by giving their employer copies of all their electronic files and the employee then taking reasonable steps to delete the home copy. After all the clause is concerned with what the employee must do. It does not purport to lay down rights of the employer to take possession of objects which are the employee's property, such as a home computer. Reasonable steps will depend on all the circumstances. No doubt the employer is entitled to know what the documents are. If the employer reasonably asks for the files to be deleted in some way then the employee will be obliged to do so. However none of this is spelled out in clause 3 and there is a limit to what can be implied into it. The focus of clause 3 is not the protection of confidential information. That is what clause 1 is for.
233. Clause 1 requires the employee to use their best endeavours to prevent publication or disclosure of confidential information. So if the employee has confidential information on their home device, that clause can be invoked. The requirement to use best endeavours is reasonable and would justify insistence by the employer that deletion to high levels is undertaken, and maybe, undertaken in a verifiable way. However reliance on clause 1 in this context is not how Invista has put its case.

Company Property – reasons to retain copies

234. One point seems to be a free standing criticism of the defendants for not agreeing to the deletion, pre-trial, of copies of documents which they disputed were Company Property pending the court's resolution of the issue. I may have misunderstood this point but if it was advanced by Invista then I do not accept it as a criticism. Once the issue had been raised in the legal proceedings (and was not struck out as unarguable) one party to litigation ought not to be criticised for retaining access to a disputed document for the purposes of the litigation, assuming that is all they are doing. Otherwise they would be forced to deprive themselves of the ability to conduct the litigation. Of course if it turns out the document ought to have been returned earlier then that failure will be found to be a breach but this is a different point.
235. Finally there were emails which Dr Chokkathukalam admitted were Company Property, which he held copies of pending the grievance produce and Employment Tribunal case. These electronic documents are not property like a single object, whereby one person keeping possession of it necessarily deprives the other of it. This issue is about a person in a dispute retaining electronic copies of relevant documents pending the dispute, it is not (now) being said that act involved a breach of any post-employment confidentiality obligation. At one stage it was said that Dr Chokkathukalam only raised that justification for keeping copies of the emails recently but it was accepted that the point was in the Defence all along. The point was not addressed in detail. I accept Dr Chokkathukalam's evidence that that was his reason for keeping that material. This is the same as the previous point. In my judgment the employment contract ought not to be construed so as to mean that an employee who is a party to bona fide proceedings relating to his employment, after that employment has ended, is not permitted to hold copies of material reasonably necessary for such a dispute, pending the resolution of the dispute. Once the dispute is over the material would have to be dealt with according to the contract.

Company property – conclusions on the Chen Library

236. I have concluded that the Chen Library was Company Property. Dr Chen deleted much of the Chen Library while he was employed. Starting from 5381 documents in the Chen Library, based on the Master Document Spreadsheet I think 4218 were deleted at that time, leaving 1163. Of that 1163, 76 remained live on Dr Chen's devices and 1087 were deleted after he left his employment (the 1087 consisting of 301 in the recycle bin and the balance deleted further). These figures are close to but not the same as the ones in the appendices to Mr Smith's Supplemental Expert's report but the differences are minor and insignificant. While Dr Chen deleted 1087 (or 1078) documents after his employment, no other defendant did this. It was admitted that 292 of those are Company Property. The balance (786) were disputed but they were all in the Chen Library and I have held they were therefore Company Property.
237. Therefore Dr Chen breached his employment contract (clause 3) by failing to return or deliver to Invista at termination of his employment the Chen Library documents which had not been deleted to level 3 before that date. The number of those documents is 1163. The deletion of 1087 of those documents was itself a breach as well. However Dr Chen did not breach clause 3 of the contract in relation to the documents which were on his personal devices but had been deleted to level 3 before termination. That number is 4218.

(iii) Competition

238. Dr Botes and Dr Chen went to work for VideraBio within the three months following the termination of their employment by Invista. I find that Dr Chokkathukalam did not do that. Dr Chokkathukalam gave clear evidence to that effect. There is an email from Dr Botes dated 11th November which suggests that Dr Chokkathukalam was working part time for VideraBio after he left Invista. I do not doubt that Dr Botes wanted to give that impression at the time, to the academic she was writing to and it may well have expressed her wish for Dr Chokkathukalam to do that, but I accept his evidence that he did not.
239. Clause 5.2.1 is a form of non-compete clause applicable to the individual defendants for a period of three months following the termination of their employment. The work done as employees of VideraBio by Dr Botes and Dr Chen for the three months after their employment with Invista ended is said to breach this clause.
240. The defendants say that clause 5.2.1 is unreasonable (and therefore unenforceable) as it goes beyond what is required to protect Invista's legitimate interest. In particular, the defendants submit that the definitions of "Competing Business" and "Competing Products" make the clause unreasonably broad and uncertain. They also assert that the provision cannot be cut down by severance in such a way that would make it enforceable but that, if it could be cut down, then the business of VideraBio would not be a Competing Business within the enforceable meaning of the clause.
241. In contrast, Invista asserts that clause 5.2.1 was necessary to protect its interests given that the individual defendants were regularly exposed to trade secrets and confidential information akin to trade secrets. They also rely on the fact that the non-compete clause only ran for three months.
242. One needs to take care that Competing Business is a defined term. It does not simply mean any business which competes with Invista. The definition refers to a company which carries out certain activities, such as research into or sale of Competing Products. Again Competing Products is a defined term and does not simply mean any product which competes with Invista. Competing Products are defined as products (processes or services) which have a defined relationship with the relevant employee. Things which the employee has worked on within the last five years are Competing Products. Counsel for Invista accepted, rightly in my judgment, that the clause must mean that for an employee who had worked for Invista for less than five years, the time period only went back to the start of their employment. The converse interpretation, which would sweep up products the employee worked on before they came to Invista, would be absurd.
243. Also within the scope of Competing Products are products (processes or services) about which the employee has acquired "the employer's trade secret, technical or non-technical information". Nothing turns on it as far as I know but it seems to me that in light of the opening words of clause 5.2, which refer to technical or non-technical confidential information (my emphasis) the word "confidential" ought to be inserted into the definition of the defined term.
244. Understanding the defined terms one can now turn to clause 5.2 to see what is prohibited. The purpose of the clause is expressly stated. It is to protect the employer's trade secret, technical or non-technical confidential information. The clause applies while the employee is employed and for three months afterwards. It

prohibits the employee from being employed by or rendering services to any Competing Business. Bearing in mind the definition it can be seen that the clause is not really about competition at all. Competing Businesses may or may not actually be in competition with Invista. The clause is actually aimed at protecting confidential information. Counsel for Invista handed up a useful extract from the textbook *Employment Covenants and Confidential Information* 4th Ed by Selwyn Bloch QC and Kate Brearley. In paragraphs 6.84 to 6.97 the authors explain the development of the idea of using a post-termination non-competition covenant as a means for protecting the kind of “mere” confidential information which, post *Faccenda v Fowler*, may not be protectable by an express post-termination confidentiality covenant. It is clear that clause 5 is exactly this kind of clause.

245. Invista approach proof of a breach of this clause in two ways. One way, summarised in paragraph 87 of the claimant’s written closing and based on the way clause 5.2.1 is drafted, seeks to identify Competing Products and then apply the words of the clause. The other way, summarised in claimant’s closing paragraph 85, relies on the expert evidence of Prof Sinskey that the VideraBio business was intended to compete against the Invista Sustainability Group (see his paragraphs 8 and 15). However as I understand the professor’s evidence, it is based on competition in its usual sense and is not based on the way clause 5.2.1 is drafted. The approach does not establish a breach of clause 5.2.1 even if it is correct.
246. The claimant’s case which is capable of establishing a breach is the one summarised in paragraph 87 of the claimant’s written closing. The particular Competing Products (bearing in mind this includes processes and services) which are relied on are:
- i) Biotransformation,
 - ii) Fermentation,
 - iii) Acetaldehyde (as an example) which is an intermediate that can be used in the production of butadiene
 - iv) The host organisms *Y. lipolytica*, and *Clostridium*.
247. Paraphrasing the words of the clause, for each Competing Product, two things must be considered: first is it something one of the individual defendants worked on at Invista (at the relevant time)? Second, is it something that VideraBio is engaged in or about to be engaged in in research, development, marketing etc.?
248. I reject the case based on biotransformation. It was put to Dr Chen but as a term it is so high level as to be meaningless. However for the other alleged Competing Products, I find that all three of the individual defendants did, at least to some extent, work on them all while at Invista. Also I find that VideraBio was, at least, about to be engaged in research or development on each of them at all material times.
249. To examine the reasonableness of the clause post termination, it is convenient to take the microbial host *Y. lipolytica*. On my findings, *Y. lipolytica* is within the scope of “Competing Product”. Since VideraBio was contemplating engaging in research relating to *Y. lipolytica* it follows that VideraBio is a Competing Business. Thus the

individual defendants would breach clause 5.2.1 if they were employed by or rendered services to VideraBio within the period covered by the clause.

250. The problem with this analysis is that Dr Botes was already an expert in *Y. lipolytica* before she came to work for Invista. She had already done work on it. It is a well-known host organism in this field. Indeed as far as I can tell her work on it was part of the reason Invista hired her in the first place. Using that host is part of Dr Botes's general knowledge, skill and experience.
251. So approached that way, the effect of this clause is to prevent an employee like Dr Botes from working in her own field using her own skill at all in that period. It certainly is not limited so as to operate only to protect trade secrets of Invista. What makes VideraBio a Competing Business is not competition with Invista. The feature which makes VideraBio a Competing Business is the fact it is interested in the same publicly known host organism as Invista has been interested in, regardless of whether there is any relationship between the purposes for which the two businesses are interested in those organisms. Another way of looking at the problem is the level of generality with which Invista's case is put, but that follows from the way the clause is drafted.
252. I recognise that 3 months post termination is a relatively short period of time. In a case in which the information the clause was meant to protect had a currency in the short term, such as sales leads, then one could see that a clause for a short period might very well make sense. However the length of this clause has no relationship to any of the information it is protecting in this case. Information, whether trade secret or not relating (say) to the use of *Y. lipolytica* to make chemical compounds has a currency much longer than three months and in truth cannot really be used for much in that short a period at all.
253. All this clause achieves when applied to employees like the individual defendants is to prevent them from exercising the very same skills they were hired for in the first place for three months post-employment. That does not benefit Invista at all. I find that the clause, in its operation as it operates after the employment has ceased is an unreasonable restraint of trade. The period in the clause is just a relatively short period to try and make an unreasonable clause seem more reasonable. That is not a justification.

(iv) Non-solicitation

254. Invista argues that after she left, Dr Botes solicited Dr Chokkathukalam and / or Dr Chen to work for VideraBio, contrary to clause 5.2.3. Dr Botes argues that this clause cannot apply in circumstances where VideraBio was not a Competing Business within the meaning of the contract. Further, Dr Botes denies having in fact "solicited" Dr Chokkathukalam or Dr Chen to work for VideraBio.
255. VideraBio is a Competing Business within the clause, for the reasons already explored.
256. I find that Dr Botes did solicit Dr Chokkathukalam and Dr Chen to do what they did in February 2016, when those two were Invista employees. That work was clearly aimed at them becoming employees of VideraBio later on when it was set up. The

meetings in April/May 2016 also amounted to soliciting those two individuals by Dr Botes, after she had ceased to be an Invista employee but while they remained.

257. Neither Dr Chokkathukalam or Dr Chen solicited any Invista employee at any material time.
258. Is Dr Botes in breach? That depends on the enforceability of clause 5.2.3 of the contracts. For similar reasons given in respect of clause 5.2.1, the defendants argue that this clause is also unenforceable as a restraint of trade.
259. In terms of construction, the clause essentially prohibits the solicitation of employees to a Competing Business. It runs for three months following termination.
260. In my judgment Invista has and had a legitimate interest in protecting the stability of its workforce, which the operative parts of this clause would do. A curiosity is that the opening words of 5.2 provide that the purpose of the clause is to protect trade secrets (etc.). If that really was the purpose of the non-solicitation clause then I would say it stood or fell with clause 5.2.1 but a fair reading of the clause is that the purpose of the non-solicitation part is wider than that. Accordingly I find that the clause is enforceable and that Dr Botes breached it.

(v) Duty of Fidelity

261. So far I have addressed the position post-employment. Invista also alleges that the individual defendants failed to act in the best interests of Invista during the time they were employed. This was by setting up or working for VideraBio before they left. Invista also says that the non-compete obligation at clause 5.2.1 also applies during the life of the contracts, and that this has therefore also been breached.
262. The defendants say that the court should not imply an additional duty of fidelity into the contracts in circumstances where the Employment Agreements contain an express non-compete provision which also applies during the life of the contract as well as after termination. Invista argues that such a duty should nevertheless be implied in this case.
263. Taking the terms of the contract first, in my judgment what Dr Botes, Dr Chen and Dr Chokkathukalam did while they were employees, such as in February 2016 and (for Dr Chen and Dr Chokkathukalam) in April/May 2016) would be a breach of clause 5.2.1. VideraBio was a Competing Business and although they were not employed by VideraBio while they were employed by Invista, it seems to me that what they were doing was consulting with it.
264. On that basis I do not have to decide whether a separate implied duty of fidelity was owed by the employees, but if it was then I would say their activity breached it.
265. The defendants argue that neither the clause nor an implied duty was breached because their activities prior to termination were neither: (1) actually competitive (as VideraBio was not part of a Competing Business); nor (2) liable to inflict great harm on the employer. As far as Dr Botes is concerned (who was the most closely connected of the individual defendants to establishing VideraBio), she also argues she was entitled, as a matter of law, to take preparatory steps to establish VideraBio while

still employed by Invista and that she was also allowed to use information within her skill and knowledge in that pursuit.

266. I do not accept any of these points. VideraBio is a Competing Business within the meaning of the clause. In my judgment the position of the individual defendants before termination is quite different from the position after termination. No question of restraint of trade applies and if anything the considerations pre-termination work the other way round. Dr Botes had been hired for expertise, amongst other things, in *Y. lipolytica*. While she was employed, her employer was entitled to expect her to use that expertise for them and not for another business. I would not characterise the full business plan prepared in March 2016 or the detailed discussions which took place on 10th April 2016 before Dr Botes's employment, as merely preparatory. The work done to write these materials and have these discussions involved the application by the individual defendants involved of the very skills the employees were employed to apply to the benefit of their employer.

(vi) SilicoLife and inducing breach of contract

267. The SilicoLife agreement, first entered into in May 2011, was amended on a number of occasions. The relevant clauses are the exclusivity clause 2.7 and the confidentiality clause 10.1 (with the definition at 1.5). The exclusivity clause essentially prevents SilicoLife from providing services to a third party in the field of use whose definition has been set out above. The terms of the agreement itself are defined as confidential information and so clause 10.1 prevents SilicoLife from disclosing those terms to third parties.
268. Invista alleges that, in the knowledge of the relevant provisions of the SilicoLife agreement, the individual defendants procured breaches by SilicoLife of these clauses in the course of their own interactions with SilicoLife for the purposes of VideraBio
269. The defendants deny this, largely on the basis that they did not intend any breach of the SilicoLife agreement and that the Claimants have not suffered any actionable loss. The Defendants also deny that any breach of clause 2.7 did in fact occur because the proposed arrangement between VideraBio and SilicoLife was ultimately abandoned and the full contract was never provided.
270. I reject the claim for inducement of breach of clause 2.7. The discussions which did take place with SilicoLife were about the possibility of that company providing services to VideraBio but they ended before SilicoLife did provide any services at all. The clause prohibits providing services, not having discussions about whether to provide services. If the discussions had borne fruit and SilicoLife had entered into the proposed arrangement with VideraBio then I can see that clause 2.7 would have been engaged (because *R. Palustris* is within the field of use although *Y. lipolytica* is not) but that never happened.
271. The claim based on breach of the confidentiality clause was not pleaded but it was addressed fully at trial and I will deal with it. The clause was breached because SilicoLife did send the contract to Dr Botes. However I find that Dr Botes did not induce SilicoLife to do this. What happened was that Mr Soares of SilicoLife took it on himself to send the terms to Dr Botes (and Dr Mitra and Mr Pearson) unsolicited. It was not requested or intended by Dr Botes. I accept that given her position in

Invista relating to SilicoLife Dr Botes must have known the terms of the SilicoLife contract (and I did not believe her denial) but that does not alter the fact that Dr Botes did not procure or induce this breach of its terms by Mr Soares.

272. I reject any allegation that either Dr Chen or Dr Chokkathukalam induced a breach by SilicoLife.

(vii) Liability of corporate defendants and joint liability

273. I am not satisfied the fourth defendant has done anything. Nor am I satisfied that any acts committed by the individual defendants before the end of their employment can be attributed to the fifth defendant. After their employment Dr Botes and Dr Chen worked for VideraBio as a trading name of the fifth defendant and acts done by them for VideraBio are acts for which the fifth defendant is liable. The same does not apply to Dr Chokkathukalam, who never worked for the fifth defendant. I would not say that Dr Chen's deletion of the files when he was served with proceedings was an act done for VideraBio. The fifth defendant is not liable for that.

274. As I have not found that any of the individual defendants have committed any torts, no issue of joint tortfeasance arises. If Dr Botes did induce the breach by SilicoLife of the confidentiality term in the contract then I would not hold Dr Chen or Dr Chokkathukalam jointly liable for that but I would hold the fifth defendant liable.

(viii) Remedies.

275. The final question is about remedies. The question is, to the extent the defendants are liable in respect of any of the issues identified above, what remedies should be ordered against them.

276. Clearly any documents found to be Company Property now must be delivered up.

277. In a draft order handed up at trial Invista indicated that it would seek an inquiry as to damages for (i) any breaches of the employees employment contracts which were proved, (ii) the procuring of a breach of contract by SilicoLife and (iii) any breach of confidence which was proved.

278. I will deal with (ii) and (iii) first. Since I have rejected (ii) (SilicoLife) altogether no inquiry should be ordered in any event. However even if I had found that a breach by SilicoLife had been induced by Dr Botes I would not have ordered an inquiry. There is no evidence at all that any loss worthy of an inquiry might arguably have occurred nor any evidence that other breaches of the same kind as the one proved had taken place. I would have considered whether to award nominal damages at the hearing to decide the consequential orders.

279. As I have also rejected (iii) (breach of confidence) altogether there should be no inquiry on that either. That is so even though the defendants admitted that some documents were "confidential information" within the meaning of the contract. That is a different point and does not mean there should be an inquiry.

280. Even if the creation and use of CBMNet slide did amount to a misuse of confidence I would not have ordered an inquiry. There is no evidence at all that any loss worthy

of an inquiry might arguably occurred arising from the use of the CBMNet slide itself. Damages (if any) flowing from that act could be assessed at the consequential hearing. There would be no need for an inquiry about that. Moreover even if the use of the document, which was a presentation to students, was a misuse of confidence, that is not an indication that further different acts of breach of confidence took place. There is no evidence that commercial work done by VideraBio has involved misuse of any Invista trade secret type information at all.

281. Turning to (i), I have found that the individual defendants did breach their employment contracts in relation to the return of Company Property and in some other respect but not to the extent alleged by Invista.
282. I turn to consider whether to order an inquiry in relation to the proven or admitted breaches. Such inquiries are commonly ordered in intellectual property cases when a single instance of an infringing act is proved. However that is because it is at least arguable (or may not be in dispute) that further instances of the same or related activities have taken place. Invista contended at trial that it did not know the full extent of everything the defendants have done. That is true up to a point but just because the claimant can truly say it does not know everything about what a defendant has been doing, it does not follow that proof of a particular unlawful act or acts automatically leads to an inquiry. When a dispute about whether to order an inquiry arises, the nature and circumstances of the acts established to be unlawful have to be examined for the evidence they shed on what else might have been taking place.
283. The breach of the non-solicitation clause does not justify an inquiry. There is no arguable case that anything else of a similar nature might have taken place which is not before the court. Invista would have been in a position to raise any arguable case about further acts of that kind if they wished to do so.
284. The acts found to be a breach of contract while the defendants were employed do show that they were going to set up VideraBio but that is apparent anyway and does not need an inquiry to establish. The same activity after termination is not a breach. Those pre-termination breaches do not justify an inquiry.
285. The real question is whether the parts of the disputed case on Company Property, as well as the admissions relating to documents (NACP), justify an inquiry.
286. The only basis on which one might conclude that further Company Property was retained which is not apparent from the material in these proceedings already is the formatting of Dr Chokkathukalam's devices. But Dr Chokkathukalam has left this industry and there is no reason to think an inquiry would reveal that he has done anything else of any relevance. So no inquiry is justified on the basis of seeking to find further instances of failure to return Company Property.
287. At this point it is necessary to take into account the documents admitted to be Company Property as well as the disputes. On my findings about the terms of the contract any documents which are Company Property but which had been deleted before the termination of the employment are not relevant. What is relevant is Company Property which was live or at level 2. The obligation to return that did apply. These are a subset of the NACP documents. For Dr Botes there were 12 and

for Dr Chokkathukalam there were 5. For Dr Chen there were 9 live documents and 99 in the recycle bin (level 2). Of the remaining 1349 – that is Dr Chen’s documents which are NACP but were deleted to level 3, for 292 of them that deletion is post-employment.

288. For the admitted documents Invista’s approach was based simply on the fact that documents existed. No attempt was made to invite inferences to be drawn from the individual documents. It is not always straightforward to track down which documents they are.
289. For Dr Botes there are 13 relevant documents. That is documents which were live (level 1 or 2) and are Company Property (either admitted or found after a dispute). One is the patent list. That was produced under the first consent order. 11 are documents which were on a defunct hard drive which Dr Botes had discarded in 2013 and on which most of the files are corrupted. The remaining one document is the one live document on the USB stick VL-30. However I have found Dr Botes was unaware of that USB stick. So the fact that Dr Botes had the 11 documents on a defunct hard drive discarded in 2013 and 1 document on a USB stick she was unaware of does not support conducting an inquiry. Dr Botes did retain the patent list but I have found she did this to keep a record of what she had done and not to further VideraBio’s business interests. It is not evidence that some conduct as yet undiscovered has taken place.
290. For Dr Chokkathukalam the only relevant documents are the 5 live NACP documents admitted to be Company Property. He addressed his live documents in his fourth witness statement. Dr Chokkathukalam only refers to two documents. Invista did not make anything of that. Dr Chokkathukalam explained that one document was a list of plasmids located on his mobile phone and another one of them was on a reformatted computer he has not used since 2014 which he had sold to Dr Botes’s daughter in 2016. As best I can tell the other three documents are a second copy of the list of plasmids and some Powerpoint slides explaining modelling and systems biology along with the covering email for the slides. These disparate documents are not evidence of relevant wrongdoing which has not come to light.
291. Dr Chen did retain parts of the Chen Library after his employment. He obviously did so because he wanted to have access to whichever of the documents within it remained undeleted. I can see that Invista can truly say it does not know the extent to which the parts of the Chen library which Dr Chen retained after his employment ended may have been used by him as part of his work for Invista. However the use of this material – as Company Property – is not the breach of contract relied on. The breach was failure to return the files. No case that use of the documents in the Chen Library was a misuse of confidence was maintained at trial. I will return to what to do about the Chen Library below. There is no possible justification for ordering any sort of investigation or inquiry relating to Company Property on a wider basis than the Chen Library.
292. Of his NACP documents (9 live, 99 level 2 and 292 only deleted post-employment), Dr Chen only comments on two. One is a list of molecular biology lab equipment produced by CPI in 2011. It relates to the time shortly after Dr Chen started at Invista when a small lab was sub-leased from CPI. The other is a Powerpoint presentation which contain a photograph of one of Dr Chen’ children and a duplicate of a slide of

data incorporated into a patent application. I have not had my attention drawn to any way of identifying the other documents. None of this justifies an inquiry.

293. Overall, I will not order an inquiry as to damages in relation to the proven breaches of contact. It would be entirely disproportionate. There is no justification for it. There is no evidence any of these activities cause any substantive or quantifiable loss to Invista. I am prepared to hear submissions about what sum by way of damages (if any) ought to be awarded for the proven breaches, including the failure to return documents in the Chen Library, at the hearing to deal with the consequences of this judgment but that is as far as it will go.
294. I do not understand Invista to be seeking any injunction against the defendants aside from the issue of delivery of documents.
295. No other remedies should be awarded.

Conclusion

296. My conclusions are:
- i) The claim for breach of confidence is dismissed altogether. The defendants did not misuse any confidential information which Invista had any right to protect after their employments ended.
 - ii) In relation to the disputes about Company Property:
 - a) The CBMNet slide, the VideraBio documents (Sch 11C), the competitor searches (in Sch 8) are not Company Property. That aspect of the case is dismissed.
 - b) The patent list (doc1.docx) is Company Property. It was in Dr Botes possession when she left Invista and her failure to return it was a breach of contract.
 - c) The Chen Library is Company Property. The contractual obligation to return Company Property to Invista does not apply to electronic data on an employee's personal device which is present because Company Property was deleted while they employed and in the course of their employment. Dr Chen did breach his employment contract when he deleted otherwise live Chen Library documents after he left Invista. His deletions before that were not a breach.
 - d) Dr Chokkathukalam's retention of documents which were Company Property pending resolution of a dispute with Invista was not a breach of his contract.
 - iii) The claim based on the three month post-employment non-competition clause fails. The clause is an unreasonable restraint of trade.
 - iv) The claim based on the non-solicitation clause succeeds against Dr Botes but fails against the other defendants.

- v) The claim based on breach of the employee's contract while they were employed (duty of fidelity) succeeds against all individual defendants.
 - vi) The claim for inducing a breach of contract by SilicoLife is dismissed.
297. There will an order requiring delivery up of Company Property but no inquiries as to damages. I will deal with costs at the hearing to deal with the consequences of this judgment.