WAsc 7258

Extracts from
Quinton Hill
Reports

1-4-1902 - 1910

QH 1 April 1902-31 March 1903: No accidents occurred during this period. Skimmers abolished from washing tanks because they were a possible cause for explosion at Nobels' factory. Air pipes were fixed in the wash tanks for the same reason. Thermometer supports were fitted in the wash tanks. Measuring vessels (burettes) for weighing out NG which are safer, quicker and more accurate have replaced scales jugs and weights. Brass lined boxes and barrels replaced by India rubber covered canvas bags. Preparations for earthing of plant being made. From 1903, hand mixing of all material preparatory to incorporating to be reverted to as it is safer. Mixing houses are lined with zinc to reduce projections for GC to settle on, and to allow for washing down of the house. The lead covered mixing tables with fixed lead sieves are ?burned to the floors. The ventilating windows are swung on brass pivots, the ?bearing surfaces of which run under vaseline. No tools of any description whatever are allowed in the house, the only moveable articles other than the soft rubber bags, being soft flannels. The men wear socks only, on their feet and are being supplied with flannels, shirts and clothes, without buttons. The GC is brought to the mixing house already weighed out in soft rubber bags. The NG is measured out in the burette and poured direct into the bags. The NG and GC are then emptied into the trough of the mixing table where they are roughly mixed before being rubbed through the half inch mesh lead sieve which is solidly burned into one end of the table. After passing the sieve the paste is collected in the bags again and is ready to be tied up and sent away to the incorporating house. In case any electricity should be generated at any stage of the mixing the whole of the plant is in metallic contact with the lead floor and this, in turn, is earthed in the usual manner. The old wooden GC storing racks with moveable gauze trays have been replaced, in stove nos 16-18 by new racks with straight brass wires two inches apart running across the shelves. There are no moveable parts in the new racks and all metal parts are connected to earth through the lead flooring. These points render the new racks very much safer than the old ones, and besides this the GC is dried much quicker as the old gauze trays had a blanketing effect on the air currents in the stove. Nitrating house almost complete. No. of charges nitrated for Mark I - 191, for Cordite MD - 246; NG made with cordite - 73 tons, NG made with MD - 96 tons; total NG m/factured - 170 tons; yield on glycerine nitrated - 218.28%.

QH 1 April 1903-31 March 1904: QH NG factory closed Aug 27 1903 because enough could be produced at Edmondsey. Improvements include: 1. New nitrating apparatus (nitrating and separating in the same vessel obviating the passage of NG through cocks of any description and allowing of the removal of the NG as it separates, used for the first time 5 May 1903). 2. New method of breaking NG waste acids (by adding from 1.5-2% of water to the waste acids produced, so as to prevent the separation of NG form waste acid after the separation proper has been completed). 3. Filtration of the charge after pre-washing (by passing the charge through a muslin or flannel filter immediately after it had been pre-washed). 4. Extended use of labyrinth (in the nitrating house through which wash waters from the prewashing tank were passed in order to reduce the amount of NG sent to the wash water settling house). 5. The replacement of lead lined wooden tanks by tanks entirely made of lead (in the nitrating and mixing houses to avoid wood saturated with unpurified NG and copper tacks falling loose). 6. The use of a weaker and colder soda solution and softened water in the washing house (preparing soda solution so it can be added to NG without dilution and therefore avoiding NG temperature getting above 37oC and the formation of lime scale). Refrigerator in use from 19 May - 27 August 1903 and enabled the nitration of the double charges to be carried out without undue loss of lime.

QH 1 April 1904 - 31 March 1905: No improvements this year as Edmondsea is being converted to a NG plant and QH is in temporary use in the meantime. 1. The original nitrator-separator of no. 2 Nitrating House still in use. 2. After separating plant not used for waste acids. 3. Four washings increased to five (as fourth still had impurities). 4. Hydrometer used to weigh dry GC instead of phosphor bronze scales which is no good in a house where much dry guncotton dust is always present. 5. Refrigerator still in use.

QH 1907-8: Remodeling on the lines of Edmondsey. No. 3 Nitrating house, the ?A/S house, charge house and ?mead washing house were pulled down and the materials used to build a new and larger charge house, capable of housing all acid soda and purified water tanks. No. 2 nitrating house was dismantled, the floor has been relaid and strengthened, and a commencement made with the replacing of the remodeled plant.

QH 1908-9: New office and lab built. Water tower into disuse.

QH 1909-10: Work has again been started in the nitrating house, both nitrators and a pre-wash being already built and set in position. A commencement has also been made with the fitting up of air and steam services. No. 1 mixing tank was repaired early in the year, and a new cover of heavier material fitted. A tower has been erected for the condensation of fumes from the mixing operations. An iron cock has been ?tried for mixed acid and has been in use for six months.

Cordite m/facture 1903-10, 1904-5 to 1913-14

Very detailed and long reports, hand writing quite difficult to read. It is not always clear if they are for QH or another plant. Folder 2 (1904-5 to 1913-14 contains duplicates of folder one 1903-10, many in pencil note form and impossible to read). Topics include: mineral jelly, acetone, paste (all technical details), incorporation, pressing, drying, cutting, blending (very detailed on every occurrence during the year), building inspection, experiments.

1903-4: QH? Output restricted due to insufficient machinery, particularly drying accommodation for larger sizes of MD. 3 new high pressure hydraulic presses obtained. New large incorporating machines have worked satisfactorily. 12 new drying stoves have been completed. No 2 blending house and magazine ?up. works no longer in use. A box house of lower stores taken into use.

1904-5: Stoving: the method of taking cordite form stores during 3 shifts has been discontinued the work being done my a day work gang. Packing as a distinct operation has to a large extent been done away with . Packing and blending in one operation is now carried out in Blending Houses. Boxes have been introduced for collecting strands of 20-10/7 and 11/15 in lotting resulting in a saving of 5% of the time for this operation. All of the new buildings with the exception of 3 magazines have been taken into use. The old packing house has been converted into a testing room and office and taken into use. The loading stages of cordite and ?lauding stage for boxes, both in black ditch were taken in use but owing to a subsidence of the banks, work has been discontinued.

1905-6: All packing and blending of small sizes of cordite and 20/sc done at QH.

1906-7: Experimental cordite MD and MkI has been made with GC made with cotton received form the Cellulose Pulp Co. and from cotton rag received from the New Explosive Co. and has been issued for Proof at Woolwich. ?Dowe has also been made from ?Ramie fibre. There has been no alteration or improvements in the methods of stoving , packing, blending, and ?lotting cordite during the year.

1907-8: QH. Again, no alteration or improvements. Reel stove and no. 3 stove have been converted to acetone stores. Estimates for a cordite factory for the Australian Govt. have been made.

1908-9: QH. No alteration in methods. Heavy rains caused landslides in the cuttings and round magazines.

1909-10: No improvements or alterations. Lightning conductors being adjusted.

1910-11: Tarring of the walls inside the houses to keep out damp carried out. Suggestion to coat outside wood platforms to prevent people slipping.

1911-12: Deal sided cordite trays deteriorate too rapidly thus they were replaced by oak sides and ended trays.

1912-13: Manufacture of Chilworth Smokeless Blank and C.M.J. carried out.

1913-14: M/facture of Nitrocellulose Smokeless Blank and C.M.J.

Acetone recovery 1903-10

1903-4: Acetone recovery plant at no. 4 tray stove. Only new feature introduced in connection with the recovery has beeecovery has been the trial of a modified Rayleigh Still for the secondary distillation of the acetone, with favourable results. Total cordite Mk I dried904-5: No alteration in methods. Redistillation report: no manufacture of acetone from acetate of lime has taken place during year. Picrate of Ammonia manufactured during this time. During the year, acetone has been recovered from 18 stovings of cordite. Solvent for stencilling cordite boxes changed from turpentine (which can cause fire) to a solvent made of higher boiling ketones and acetone condensation products (which are acetone m/facture by-products).

1905-6: The re-erection, in connection with no. 1 and 2 reel stoves (Great Hoppit), of the small acetone recovery plant removed from no. 4 and 5 tray stoves (QH) was completed in the beginning of June 1905 and on June 5th the recovery from No. 2 reel stove was started. At first the yield of acetone was small, owing mainly to the loss of vapour through the roof of the stove which was not gas tight. To reduce the loss, the roofs were lines with canvas and painted. This increased yield, though the

unsuitable plan of the stoves still means recovery is not as high as possible. This is also due to the fact that much of the acetone used in the manufacture of the smaller sizes of cordite is lost before reaching the stoves. The general system of recovery proved satisfactory and no alterations were mede int he methods employed. No acetone made from acetate of lime.

1906-7: Difficult to read. Concerned with Cob Mead.

1907-8: Plant altered considerably during the year resulting in increased yield of acetone and less loss of material. Alterations include: intermediate pullys fitted to vapour pumps, sealing rings fitted to small flash traps, solution pumps replaced by eggs (??), delivery pipes altered from secondary pump to large tank inside building, caustic soda tanks fixed over primary distillate tanks, main with ?cracks fitted form still watchers to primary tanks (??), water supply to ? and tanks altered so as to do away with hose and flexible ?cruppings, fittings provided and connections made to ?vers for blowing acetone vapour from drums after emptying, trough with cooling pipe fitted to residual banks, the air compressor from Hoppit plant has been removed and fixed in pump room, the removal of sulphur burner to verandah so as to do away with cocks and the frequent repair of piping, is in hand.

1908-9: The set of vapour pumps to which has been fitted intermediate gearing have been worked almost continuously since the alteration was made in May 1907. They are now in a bad state of repair and the values in particular require immediate attention. This is in hand. The sulphur burners were removed to verandah early in the year and have worked very satisfactorily since. A single lead coil for boiling the solution in primary stills was fitted in May and proved to be more suitable than any system tried previously, all three stills have now been fitted in this way. The rubber slip joints have been replaced on towers by earthenware cocks. The solution pumps and rotary pump with gearing and motor have been removed from the west end of the building and replaced by eggs. Foundations and platforms have been erected to receive the refinning still and condensors brought from Woolwich. The automatic centrifugal water pump has not yet been made satisfactory and is still in hands of contractor.

1909-10: c163 tons acetone recovered over the year (up on last year). The second set of vapour pumps have been altered to work at a slower speed and can now be used alternately with the set previously altered. The ?Rif [paper ripped] still recovered from Woolwich last uear has been erected and is ready for work when required. The automatic centrifugal pump has been completed but beyond trial runs has not been used. The glass covers on top of towers have been removed from one set and replaced with wooden covers.