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GEOLOGICAL REPORT
ON
THE OIL LANDS
OF
Parish Fork
OF
Standing Stone Creek,
IN
WIRT COUNTY,
WEST VIRGINIA,
BY
JAMES HIGGINS,
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OF
MARYLAND.



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GEOLOGICAL REPORT.

BALTIMORE, NOVEMBER 1, 1866.

L. K. BOWEN, ESQ. :

SIR: Since my examination of the Oil Lands on Parish Fork, and my report thereon, made to you nearly two years since, at your request, with a view to your purchase of the "Bailes farm," further investigations and examinations made in that region, with subsequent developments, enables me to prove that my opinions then expressed are not only sustained, but more than realized.

I then stated to you in my written report that, from geological exploration, and due collection of all the attainable facts, the confident belief might be entertained that the oil producing region (*in paying quantities*) of West Virginia would be found within the limits of a well defined "Break," "Belt," or "Upheaval" of territory, extending from the vicinity of Newport, on the Ohio River, in a south-westerly line to Burning Springs, on the Little Kanawha River; and thence, in the same direction, towards the south-western portion of the State. The extensive developments of nearly two years, stimulated by hope of gain, and encouraged by peace and an abundant money market, have shown the fact that all, or at least nearly all of the paying wells, have been located in this Belt between the northern extremity, on the Ohio River, and Burning Springs, on the Little Kanawha. It has been ascertained that of seven hundred and twenty-four (724) wells outside of the Belt, not one has produced oil in paying quantities; whilst between these points, within the Break, there has been comparatively but

few failures where proper care in the selection of boring sites has been taken, or the teachings of practical experience been regarded.

The first territory developed within this Break, to any considerable extent and profit, was at Burning Springs. Part of that territory lay east, and part west of the centre of the Break; the first producing wells being on the western slope. This location at Burning Springs is, to this day, the southern limits in the Break as far as developed; and, in the opinion of some, the southern limits of the paying oil producing territory in West Virginia. Future developments will either affirm or disprove the truth of this opinion.

Next in course of development came the Walker Creek section, at Petroleum, on the eastern slope of the Break north of the Northwest Virginia Railroad. There wells have proved eminently profitable; they were shallow, and produced very superior oil. Following them came the wonderful developments at White Oak, on the western slope. Prof. Richardson, of New York, who has examined this region has enunciated the fact that the great wells of West Virginia, thus far, are on the western slope, and near the inner line of the western "*dyke*." Professors Andrews and Evans, of Cincinnati, accompanied by one hundred and twenty of the leading capitalists of Ohio, in November last, personally inspected the wells and the lands of the White Oak region, and fully confirm the facts laid down by Professor Richardson. The famous Harkness, Longmoor, Logan, Tip Top, and other wells, are all located near the inner or eastern edge of the western "*dyke*" of the Break.

The next region brought into successful development, after White Oak, is at a point nearly due south of Bailes' farm, on Parish Fork, called "Oil Rock," situated on Robertson's Fork, as shown by the map annexed. This fork runs from northeast to southwest, nearly parallel with Parish Fork, and about one half mile south of it. Prior to August last, five or six wells have been bored at different points of the Break on this branch without success; and, in the latter part of the month, at a point *west* of the centre of the Break

or Belt, on its western slopes, a well was struck called the "Orchard Well," which was yielding, on the first of the present month, from six hundred to seven hundred barrels per day. At the present time there are eleven producing wells at this point, yielding from two to three thousand barrels per day. This property was owned by a Company in Michigan, and consists of about twenty-five acres. It is now leased out at an average of \$3000.00 each per acre, and a royalty of one-third of the oil.

There are now more than one hundred wells being bored in this vicinity. By careful examinations made from this point north, it is found that the Break passes directly through the property which you now propose for development, viz: the Bailes' farm. The early developments on the Parish Fork were even more favorable than on Robertson's Fork, or at White Oak. Previous to the great strike on these borders, the Jennings' Company bored their wells at a point near the middle of the Break, all of which produced oil at shallow depths in paying quantities; the oil being of the best kind for lubrication: being of gr. from thirty to thirty-two degrees. That Company now find their wells too near the centre, and too shallow for large yield, and they are now engaged in boring their old wells deeper, and sinking their new wells nearer the western dyke, with a certainty, I think, of obtaining large supplies of oil.

On Parish Fork the western "dyke" lies between Doe Run and Buck Run, on the Bailes' tract At this point the dip of the rock is at a more acute angle, and indications of greater substratical disturbances are shown than at White Oak. This dyke is, in fact, a natural dam which shuts in the oil in its passage westward from its original sources; thus creating the heavy oil deposits as have been proven at White Oak. Upon the eastern verge of the western limits of this dyke, as at the Harkness well, oil will be found at moderate depths—passing westwardly across the dyke at greater depths; whilst west of the dyke, within the Break, as between the eastern edge of the dyke and the

centre of the Break, at different depths and more uncertain quantities. At the centre of the Break the rocks lie horizontal and not much broken, and the fissures are perpendicular, thus rendering an opening into them uncertain; whilst elsewhere the fissures pass in every direction. This theory has been satisfactorily proven on Parish Fork, as at other points. In the centre of the Break two wells have been bored over eight hundred feet each without producing oil. A few hundred yards west of the centre, the Jennings' Company have bored *five* wells varying from seventy-nine feet to five hundred feet each, all striking oil of the best kind. It only remains to penetrate the rocks still further west on this stream to find satisfactory results as at White Oak, in immense quantities.

On the Bailes' Farm the eastern limits of the western dykes are relatively precisely identical with the location of the celebrated Harkness, Atwater, Logan, and other great wells on White Oak, and the old Eternal Centre, Gilfallin and other celebrated wells at Burning Springs.

The developments which have been heretofore made in this Break, show the fact that at the lines where streams cross it from northeast to southwest, between the Ohio and Kanawha Rivers, oil in paying quantities is found. Now this is not a mere coincidence, but depends on one and the same cause. The water originally falling on this territory found its easiest and most natural passage to the Ohio River by the fractures and breaks in the surface strata, and these are intimately connected with the faults, breaks and dislocations which below the surface favor the formations of caverns and receptacles for the deposition of the oil known and proven to exist within this Belt.

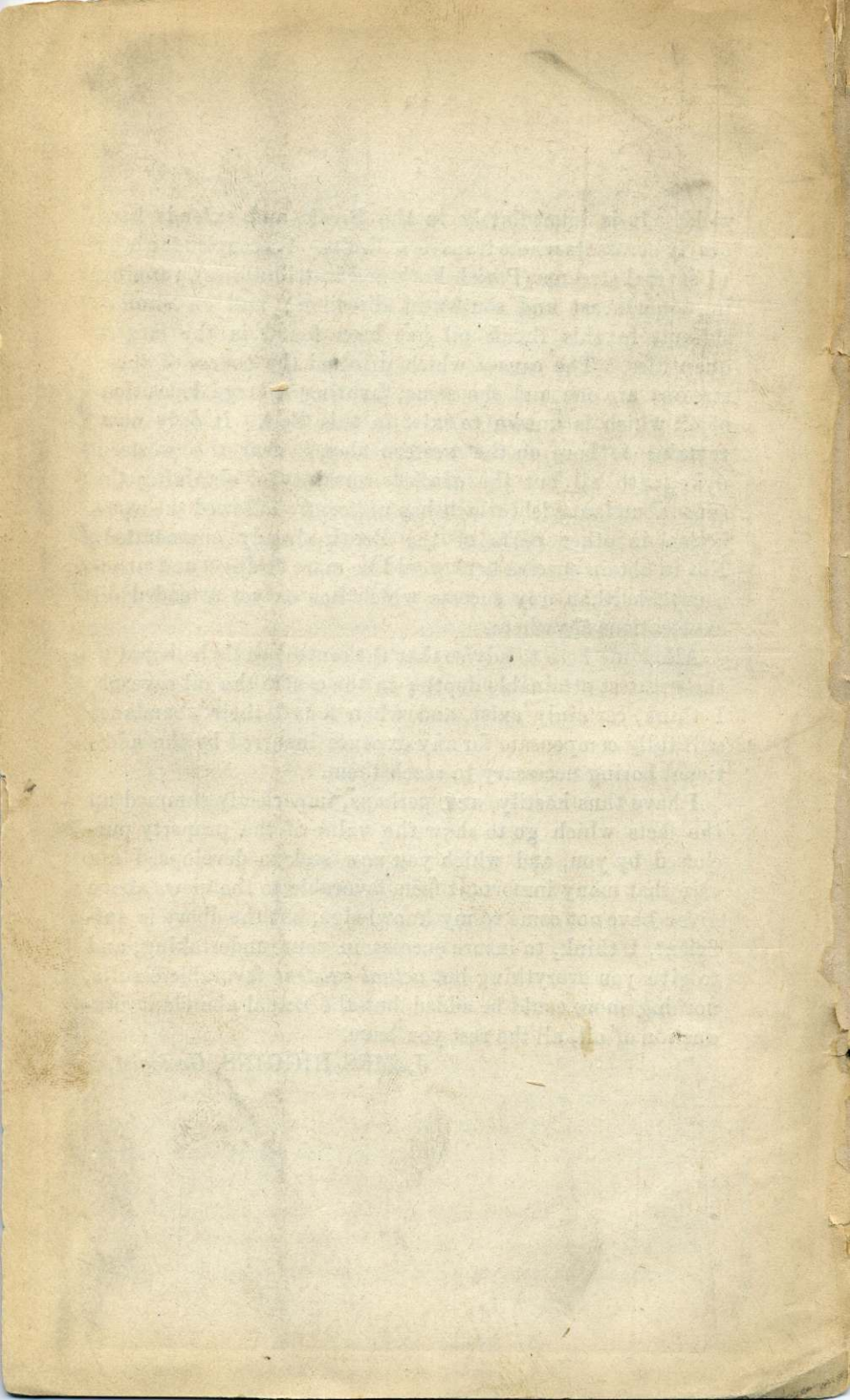
The practical results of boring have proven the existence generally of another fact, that whilst in the middle of this Break, from east to west, the chances are rare of striking oil caverns; that both on the eastern and western slopes of it are the best locations. The situation of your property there, with the developments actually made on, and immediately contiguous to it, gives every possible assurance of abundant oil

yield. It is immediately in the Break, and extends here nearly across its whole transverse limits. It occupies the beds of several streams (Parish Fork and its tributaries), running in a northeast and southwest direction; and on similar streams in this Break oil has been found in the largest quantities. The causes which directed the course of these streams are one and the same, favoring a large deposition of oil which is known to exist in this Belt. It only now remains to bore on the western slopes, near the western dyke, with all but the *absolute* certainty of obtaining the same abundant yield which has uniformly followed the same action in other parts of the Break already enumerated. Not to obtain success here would be more strange and unaccountable than any success which has as yet attended oil explorations anywhere.

Allow me here to advise that the central wells be bored to the greatest attainable depth; in the centre the oil caverns, I think, certainly exist, and when found their abundance will fully compensate for any expense incurred by the additional boring necessary to reach them.

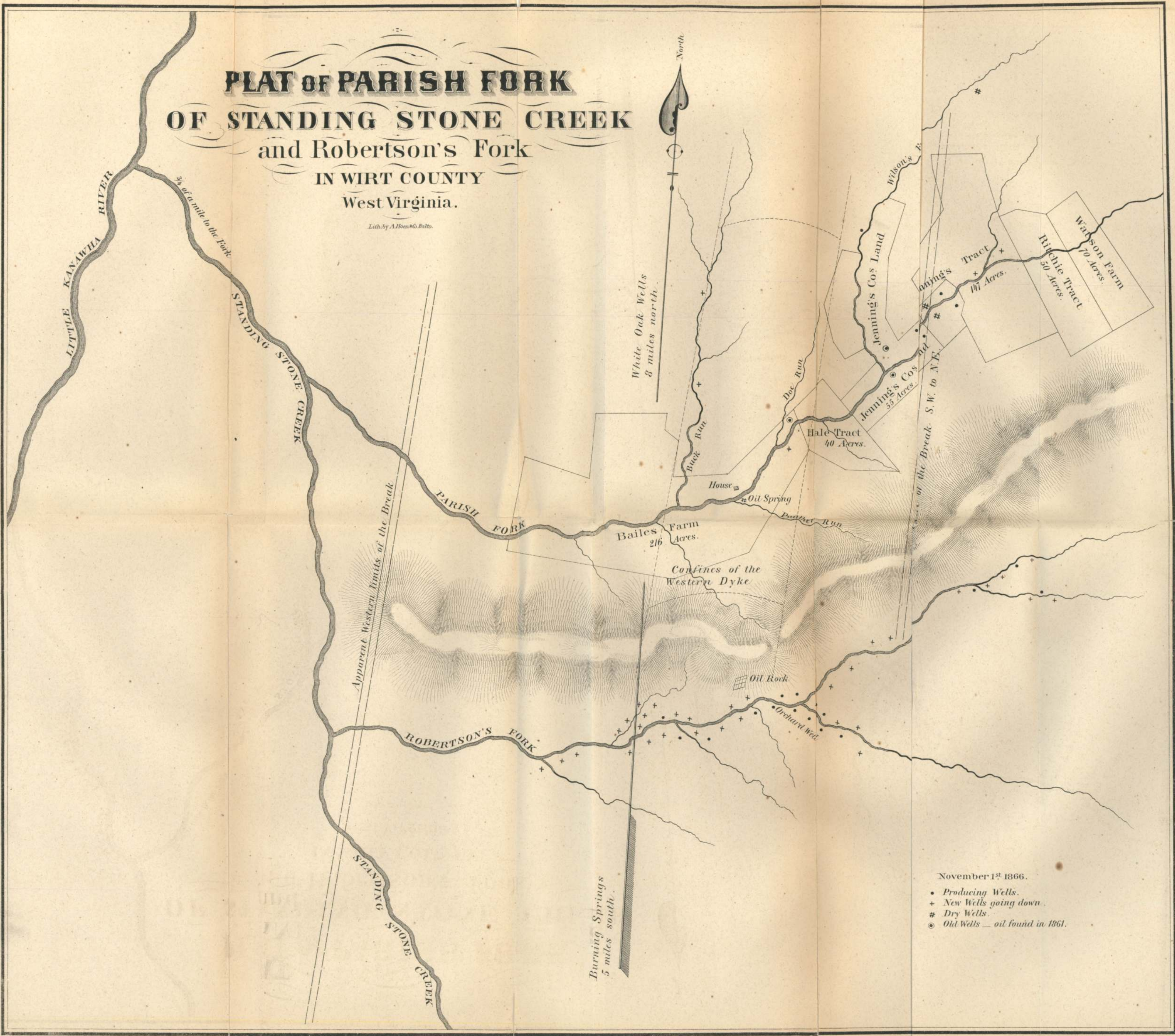
I have thus hastily, and perhaps, imperfectly summed up the facts which go to show the value of the property purchased by you, and which you now seek to develop, I am sure that many important facts favorable to the views above given have not come to my knowledge, but the above is sufficient, I think, to insure success in your undertaking, and to give you everything but *actual existent* favorable results, nothing more could be added but the actual abundant production of oil, all the rest you have.

JAMES HIGGINS, *Geologist.*



PLAT OF PARISH FORK OF STANDING STONE CREEK and Robertson's Fork IN WIRT COUNTY West Virginia.

Lith. by A. Hens & Co. Balto.



November 1st 1866.

- Producing Wells.
- + New Wells going down.
- # Dry Wells.
- ◉ Old Wells - oil found in 1861.