"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNIY, I. A.

PA 45/49T102

USSR/Physics Mar 49
Filtration, Gases
Filtration, Liquids

"Method of Gradual Change of Steady State and Its Application to Problems of Unfixed Filtration of Liquids and Gases," I. A. Charniy, Inst of Mech, Acad Sci USSR, 20 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 3

Subject method is exact enough (up to 10%) for solution of problems in nonstable filtration of liquids and gases. Presents formulas which can be used to determine some hydromechanical

[redacted] 45/49T102

USSR/Physics (Contd) Mar 49

dimensions of layers on basis of data from studies of nonstable filtration. Submitted by Acad L. S. Leybenzon, 6 Sep 48.

[redacted] 45/49T102

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNIY, I. A.

USSR/Petroleum
Oil Deposits
Petroleum Industry

Apr 49

"Announcing That the Stalin-Prize-Winning Book, 'Scientific Principles in the Exploitation of Oil Deposits' Is Available for Purchase" 1 p

"Energet BYUL" No 4

A. P. Krylov, M. M. Glogovskiy, M. F. Mirchink, N. M. Nikolayevskiy, and I. A. Charniy compiled this 416-page critical survey of existing methods of developing oil strata. Gives theoretical and practical bases for developing deposits, from viewpoints of geology, hydrodynamics, and economics. Example of a detailed application of the method developed by authors. Book is designed for geologists, engineer-technicians of the petroleum industry, scientific workers, and students of the advanced petroleum and geological schools.

PA 54/49T98

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

PA 52/49T12

USSR/Academy of Sciences
Science

Jun 49

"Works Published in 1948 by Academicians, Corresponding Members, and Other Scientific Collaborators of the Department of Technical Sciences (Complete List)" 12 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 6

Includes the books: S. A. Khristianovich, V. G. Gal'perin, M. D. Millionshchikov, and L. A. Simonov's "Applied Gas Dynamics," Published by Cen Aerohydrodynamics Inst; I. A. Charnyy's "Subsurface Hydromechanics"; B. N. Yur'yev's "Vortex Theory of Propellers," published by Mil Aeronaut Eng Acad imeni Zhukovskiy; and B. A. Vvedenskiy and A. G. Arenberg's "Problems in Ultrashort-Wave Propagation." Also includes G. L. Polisar's article, "New Electrical Integrators Used in Solving Shipbuilding Problems" ("Sudostroyeniye," No 1, 1948).

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

Applied Mechanics Review

Vibrations, Balancing

1633. J. A. Chamfi, A. J. Froidenson, and Z. T. Arustamova, Dynamic calculation of rods of deep oil pumps considering the friction forces against the pump tubes (in Russian), Izv. Akad. Nauk SSSR Ser. tekh. Nauk 1949, no. 6, 865-873 (June 1949).

The forced vibrations in a deep-well pump rod are worked out on the basis of a force diagram measured at the upper end of the pump rod. Friction is included, the viscous-damping coefficient being evaluated from the average input-work rate at the top of the rod, and the average output-work rate in lifting a measured quantity of oil from the well bottom. The theory of longitudinal vibrations is worked out to give the loading on the plunger and the motion of the plunger. In applying this theory to an actual oil-well installation, excellent agreement was obtained between the predicted motion of the plunger and the measured output of the well.

Walter W. Soroka, USA

1950

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

22468. Charnyy, I. A. Skvashin metodoin vosstanovleniya dinamicheskogo uroviya pri uprugom rezhime fil'tratsii. trudy mosk. neft in-ta im. akad. gubkina, vyp 9, 1949, s. 37-45.

SO: LEPOTIS' No. 30, 1949

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A., PREYDENZON, A.I. i ARUSTAMOVA, Ts. T

19938 CHARNYY, I.A., PREYDENZON, A.I. i ARUSTAMOVA, Ts. T.

Dinamicheskiy raschet shtang gtuhokikh neftyanykh nasosov s uchetom sil troniya o nasosnyye truby. Izuestiya Akad. Nauk SSSR, Otd-niye tekhn Nauk, 1949, #26, s. 855-75

So: Letopis Zhurnal Statey, Vol. 27, Moskva, 1949

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

Charnyĭ, I. A. The method of successive displacement of stationary states and its application to the problem of unstationary filtration of fluids and gases. Izvestiya Akad. Nauk SSSR. Otd. Tekhn. Nauk 1949, 323–342 (1949). (Russian)

Source: Mathematical Reviews, Vol 10, No. 9

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

F

G

15. ADVANCE OF BASAL WATER IN DOME TYPE GAS DEPOSITS. Charnyi, I. A. (Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk (Bull. Acad. Sci. ULS.S.R., Sect. Tech. Sci.), Sept. 1950, 1326-1344).

The behaviour of underground water when natural gas is removed by a borehole is discussed theoretically, and methods are given for calculating its movement. Numerical examples are worked out.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNIY, I.A.

Soil Mechanics, Seepage

AMR

31

2270. Charnii, I. A., On a graphe-analytic method in the theory of filtration (in Russian), *Izv. Akad. Nauk SSSR*, no. 7, 1951-1954, July, 1948.

The region of flow to be studied, lying between two surfaces of equal pressure, H_1 and H_2, is divided into approximating stream tubes of cross section $\sigma(S)$ depending on the coordinate S measured along stream tube. Though provision is made for a more general law of filtration, all examples and most discussion relates to Darcy's law, $q = -\kappa\sigma dH/dS$, where q is the flux. For incompressible liquids this gives, on integration, $q = \kappa R^{-1}(H_1 - H_2)$, where the numerically computable $R = \kappa_0 \int \sigma_0^{-1} dS$ is called the filtration resistance of the tube. Total filtration resistance per unit length $f = [\sum_{i=1}^{n} R_i^{-1}]^{-1}$ for an eccentrically placed tile line within a larger pipe is computed with $n = 10$ and with wedge-shaped stream tubes. Comparison with analytically determined value shows best agreement when eccentricity is small, poorer agreement for larger eccentricities. R. F. Gaskell, USA

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

168T25

USSR/Engineering - Hydraulics Jul 50

"Graphoanalytical Method in the Theory of Filtration," I. A. Charnyy, Inst of Mech, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 7, pp 961-965

Develops graphoanalytical method to determine [redacted] yield in filtration flow of liquid. Method gives lower limit of yield. Upper limit may be determined by method of replacing flow region under consideration with another region which [redacted] filtration resistance known to be reduced. Thus, limits may be established, between which real value of yield is included. Submitted by Acad A. I. Nekrasov.

[redacted]

168T25

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYI, I. A.

Charnyi, I. A. On the movement of ground water into gas deposits of dome type. Izvestiya Akad. Nauk SSSR. Otd. Tekhn. Nauk 1950, 1326-1344 (1950). (Russian)

This paper is concerned with the development and numerical solution (Picard's method) of a differential equation of the type $du/dt = \phi(t, u)$, arising due to forcing of a gas from an underground deposit. Novelty is claimed in permitting influence of gravity and elasticity of the water to enter the problem. Considerable space is devoted to numerical calculations. *R. E. Gaskell* (Ames, Iowa).

Source: Mathematical Reviews, Vol. 12 No.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

Vlasov, I. O., and Carnyl, I. A. On a method of numerical integration of ordinary differential equations. Akad. Nauk SSSR. Inženernyi Sbornik 8, 181–186 (1950). (Russian)

The authors present and illustrate with several numerical examples a simple method of solving ordinary differential equations numerically. For a single equation of first order $dy/dx=f(x, y)$ the step from x_0 to x_1 is computed by the formula

$$y_1=y_0+\frac{[f(x_0, y_0)+f(x_1, y_0)](x_1-x_0)}{2-f_y(x_1, y_0)(x_1-x_0)}.$$

For systems of equations the step is made with obvious generalizations of this formula. *W. E. Milne.*

Source: Mathematical Reviews, Vol 13 No. 3

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

"Continuous Movement of a Real Fluid in Pipes," Moskva, Gos. izd-vo tekhniko-teoret lit-ry, 1951

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

PROCESSES AND PROPERTIES INDEX

F S

3403. METHODS OF LINEARIZING NON-LINEAR EQUATIONS OF THE HEAT CONDUCTIVITY TYPE. Charnyi, I.A. (Izvest. Akad. Nauk SSSR, Otdel. Tekh. Nauk (Bull. Acad. Sci. U.S.S.R., Sect. Tech. Sci.), June 1951, 829-838). 79, No. 6

The method indicated is based on making an approximation for a non-linear coefficient in the equation by means of another equation, which is selected so that the non-linear equation is converted to a linear one. Applications are shown to variable percolation of gases in a porous medium, variable movement of subsoil water with a free surface, and to the problem of temperature distribution in a solid body whose coefficient of heat conductivity depends on temperature.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

Čarnyĭ, I. A. On methods of linearization of nonlinear equations of the type of the heat conduction equation. Izvestiya Akad. Nauk SSSR. Otd. Tekhn. Nauk 1951, 829–838 (1951). (Russian)

A method of linearization is given for certain non-linear differential equations arising in problems of heat conduction, of the filtration of gases through porous media, and of the non-stationary flow of ground waters. This method consists in approximating a non-linear coefficient in the differential equation by means of a function which is chosen in such a way that the equation is transformed into a linear one. For the purpose of illustrating this method let the problem of gas filtration be put in the form

$$\rho \mathbf{V} = c\rho \frac{d\rho}{dp} \operatorname{grad} p, \quad \operatorname{div} \rho \mathbf{V} = -m\, \partial\rho/\partial t,$$

where $\mathbf{V}$ is the velocity vector of filtration, c and m are constants depending on the nature of the gas, and the medium through which the filtration takes place, ρ is the variable density of the gas, p the absolute pressure, and t is time. In this case the linearization is accomplished by setting $\rho d\rho/dp$ equal to a constant, say α. This is equivalent to assuming that the density of the gas is given by an exponential expression in terms of the pressure p.

H. P. Thielman (Ames, Iowa).

Source: Mathematical Reviews, Vol 13 No. 2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

USSR/Geophysics - Filtration 21 Aug 51

"Strict Demonstration of Dupuie Formula for Pressureless Filtration From an Interval of Leakage," I. A. Charnyy, Moscow Petroleum Inst imeni I. M. Gubkin

"Dok Ak Nauk SSSR" Vol LXXIX, No 6, 21, pp 937-940

Considers the problem concerning the pressureless filtration through a rectangular dam (bulkhead) on an impermeable base, and also the problem concerning radial pressureless flow toward a well (sink). Submitted by Acad A. I. Nekrasov 25 Jun 51.

222738

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

USSR/Mathematics - Filtration, Petroleum 1 Sep 51

"Concerning the Magnitude of the Interval of Leakage in the Case of Nonpressure Filtration," I. A. Charnyy, Moscow Petroleum Inst imeni I. M. Gubkin

"Dok Ak Nauk SSSR" Vol LXXX, No 1, pp 29-32

The theory of nonpressure movement of liquid in a porose medium with an interval of leakage (oozing) has been treated comparatively recently (Polubarinova-Kochina, 1942; M. Masket, 1949) for a rectangular dam on an impermeable base, but not for flow toward a shaft (sump pit). Proposes a new approx method for computing the magnitudes of the intervals of leaking for these currents. Submitted 25 Jun 51 by Acad A. I. Petrovskiy.

221T63

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

[illegible] of the point of greatest displacement of the dividing interface with regard to its position on the contour, the graphical solution proposed by Muskat is replaced by analytical expressions enabling determination of the apex of the cone in relation to the sink or discharge. The corresponding delivery can be determined from the position of the apex of the cone thus determined.

Paper describes a method for calculating the limiting depression which is founded on utilizing data furnished by electrolytic analogs of the incomplete boreholes, and a method for evaluating the filtration resistance of incomplete boreholes analytically. The deviations from the linear law existing in the vicinity of the perforating

1/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

[illegible] the same postulates author analyzes the delivery of horizontal bores tapping a stratum with a subjacent water table.

Subsequently [Rel. Zh. Mekh. 1934, Rev. 2208], author obtained [illegible] relationships, enabling estimation of the possible [illegible]

Translation [illegible] Ministry of Supply, England

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

1. I. A. CHARNYY

2. USSR (600)

4. "Irregular movement of real liquid in tubes." Reviewed by G. G. Chernyy, Sov. kniga. no. 1. 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

1. CHARNYI, I.A.

2. USSR (600)

4. Drainage

7. Pressureless flow of liquid toward incomplete boreholes and needle filters, Izv. AN SSSR. Otd. tekh.nauk. no. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

Among the papers presented by the First All-Union Conference on Aerohydrodynamics (8-13 Dec 1952) convened by the Institute of Mechanics, Academy of Sciences USSR, was:

"Inflow With Imperfect Oil Wells in Oil Deposits with Base Water or a Gas Cap (Water and Gas Cones)" by Charnyy, I. A. (Institute of Mechanics, Academy of Sciences USSR)

SO: Izvestiya AN USSR, Otdeleniye Tekhnicheskikh Nauk, No. 6, Moscow, June 1953, (W-30662, 12 July 1954)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

USSR/Engineering - Hydraulics, Earth Dams Jun 53

"Calculation of the Free Surface Depression in the Body of a Dam When the Levels of Head Water and Tail Water Are Changed," I. A. Charnyy

Iz Ak Nauk SSSR, OTN, No 6, pp 813-827

Discusses differential eqs of unsettled motion of ground waters with free surface, analyzes phenomenon of filtration through trapezoidal dam with vertical upstream side and develops method for calcg depression of free surface in body of earth dam,

275T37

taking into consideration seepage area. Presented by P. Ya. Kochina, Corr Mem Acad Sci USSR 11 Apr 53.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

KRYLOV, A.P.; GLOGOVSKIY, M.M.; MIRCHINK, M.F.; NIKOLAYEVSKIY, N.M.
CHARNYY, I.A.

History of creating a system for developing Devonian horizons in the Tuymazy fields. Trudy MNI no.12:15-20 '53. (MLRA 9:8)
(Tuymazy--Petroleum engineering)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A., professor, doktor tekhnicheskikh nauk; ROZENBERG, M.D., kandidat fiziko-matematicheskikh nauk.

Reciprocity of wells in the flexible regime of fluid filtration. Trudy MNI no.12:184-201 '53. (MLRA 9:8)
(Petroleum engineering) (Hydrodynamics)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A., professor, doktor tekhnicheskikh nauk; KELASH, P.M., professor, doktor tekhnicheskikh nauk.

Scale models of the problem of a non-newtonian liquid in prismatic tubes. Trudy MNI no.13:124-129 '53. (MLRA 8:6)
(Hydrodynamics)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

USSR

2402. Charnil, I. A., Influx of underground water to wells and needle filters (in Russian), *Inzhener. Sbornik, Akad. Nauk SSSR* 17, 179–198, 1953.

Author offers a method of calculating the discharge into wells using an electrical analogy method. He also indicates a method for the calculation of the free water-table level. Calculations of needle filter to lower the water-table are given, as well as worked-out examples. A. Gordon-Foster, England

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYI, I. A.

Filters and Filtration

Pressureless filtration in a medium with a variable vertical permeability, Dokl. AN SSSR 88, No. 5, 1953.

Generalization of Dupuy's formulas. Studies the pressureless stationary ground flow of an incompressible fluid for a horizontal stratum impervious to water, where the coefficient of filtration k is a function of height z. Reduces pressureless flow to an equivalent pressure flow. Presented by Acad. A.I.Nekrasov 3 Dec 52. 258T76

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

USSR/Geophysics - Oil Wells 21 Aug 53

"The Break-Through of Bottom Water Into an Oil Well," I. A. Charnyy

DAN SSSR, Vol 91, No 6, pp 1293-1296

States that no precise theory exists to explain the phenomenon in which water or upper gas breaks through, for a certain increase in depression from above, into a well sunk in petroleum deposits that have bottom water or a gas cap. The existing approximate theories proceed from the assumption that the deviation of the surface of

275T61

separation between water and oil or between gas and oil from a flat shape does not influence the potential distribution in the petroleum portion of the strata. Here the author indicates the limits between which the output of an oil well is included before the water or gas begins to break through. Presented by Acad A. I. Nekrasov 20 Jun 53.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYI, I. A.

USSR/Geophysics - Petroleum Well Yield 1 Sep 53

"Calculation of the Yield of an Incomplete Well Through the Break-Through of Bottom Water or Upper Gas," I. A. Charnyy

DAN SSSR, Vol 92, No 1, pp 17-20

Continuation of a study (DAN, 91, No 6, 1953) which showed that the limiting yield Q of an incomplete oil well subjected to break-through by surrounding water satisfies the inequality $Q_1 < Q < Q_2$, where Q_1, Q_2 are the yields of undisturbed motion for certain conditions of potential distribution. Refines this inequality. Acknowledges aid of

274T57

V. A. Yevdokimova in the construction of the graphs. Presented by A. I. Nekrasov 22 Jan 53.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

USSR/Geophysics - Filtration 11 Sep 53

"An Integral Relation and its Application to the Solution of Certain Problems of Headless Filtration," I. A. Charnyy, Inst of Mechanics, Acad Sci USSR

DAN SSSR, Vol 92, No 2, pp 251-254

B.T.R.
Vol. 3, No. 4
Apr. 54

Considers an incompressible fluid flowing toward a well in a stratum of variable thickness. The motion is assumed to be stationary, axisymmetrical, and pursuant to Darcy's law. Gives an example of headless infiltration through a rectangular bulkhead or dam on a horizontal water-resistant layer. Derives the influence of capillary lifting on the

269T62

yield in the case of headless infiltration. Calculates the horizontal moving force acting against a hydrotechnical structure from the side of the ground flow. Presented by Acad A. I. Nekrasov 24 Jun 53.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

USSR/Engineering - Hydraulices FD-1099

Card 1/1 Pub. 41-11/17

Author : Charnyy, I. A.

Title : Methods for calculating the change in position of the interface of petroleum and water in strata

Periodical : Izv. AN SSSR. Otd. tekh. nauk 4, 107-120, Apr. 1954

Abstract : Presents theoretical methods for calculating the change in position of the interface of petroleum and water in a porous medium, for the following conditions: (1) Displacement of one fluid by another for a system of rigid stream tubes (2) Motion of water-petroleum contact in a sloped stratum, for various degrees of permeability; (3) Radial displacement of petroleum by water, for various degrees of permeability. Diagrams. Five references.

Institution :

Submitted : April 23, 1954

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

Chernyy, I. A.

1828. Chernyi, I. A., Inflow to wells in strata of unequal permeability, Izvestiya Akad. Nauk SSSR 18, 31-40, 1954.

Author treats the flow to wells which are located in two strip strata parallel to their vertical contact where the parameter $c = kb/\mu$ changes suddenly (k = permeability, b stratum thickness, μ viscosity of liquid). It is assumed that Darcy's law is valid and that the boundary pressures are known. The flow to the wells of both rows is governed by Laplace equations whose constants are determined by continuity condition at the contact of the strata and by boundary requirements assuming either constancy of boundary pressures or impermeability of the boundary.

In an analogous way is treated the flow to wells located in a circular stratum of constant parameter c_0 and either isolated or grouped inside circular fields of various parameters c_i. In the first step, such fields are substituted by fictive wells which themselves are then treated as circular strata of second degree. The pressures on the surfaces of fictive wells are dealt with as supplementary intermediate unknowns. This solution can be applied also for strata with oval boundary and irregular enclosures, using the method of conformal transformation.

Finally, two examples are given. L. Sokljic, Yugoslavia

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

AID P - 545

Subject : USSR/Engineering

Card 1/1 Pub. 78 - 11/29

Author : Charnyy, I. A.

Title : Letter to Editor

Periodical : Neft. Khoz., v. 32, #7, 45, Jl 1954

Abstract : The author offers a correction to the equation given in his earlier article "Heating of the pre-face zone with hot liquid pumped into the well" (Neft. Khoz., No. 2 and 3, 1953).

Institution : None

Submitted : No date

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A

USSR/Engineering - Filtration FD-2236

Card 1/1 Pub 41-4/17

Author : Charnyy, I. A., Moscow

Title : The concurrent inflow of oil and bottom water into an imperfect well

Periodical : Ivz. AN SSSR, Otd. Tekh. Nauk 2, 27-40, Feb 1955

Abstract : Studies the entry of bottom water into oil when the bottom water depression passes a certain point. Proposes a method for computing output of oil and water. Examines concurrent flow of water and oil, filtration resistance in a homogenous, anisotropic strata, a strata tapped by only a few walls, and the concurrent flow of oil and water into a slanting strata well. Formulae, tables, diagrams. Fourteen USSR references.

Institution:

Submitted : February 7, 1955

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

USSR/Geology - Petroleum FD-2922

Card 1/1 Pub. 41-3/17

Author : Charnyy, I. A., Moscow

Title : Flow towards wells in a stratum under variable subterranean contour pressures of the field.

Periodical : Izv. AN SSSR, Otd. Tekh. Nauk 6, 22-24, June 1955

Abstract : Deals with the calculation of interference in output between wells working the same field. Determines the parameters of wells in relation to the common field with the aid of isobar charts. Formulae.

Institution :

Submitted : April 19, 1955

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNY, I.A.

3864. Charny, I. A. The calculation of the percolation interval in a no-pressure feed to incomplete and complete boreholes (in Russian), *Trudi Mosk. neft. in-ta* no. 14, 242–250, 1955; *Ref. Zh. Mekh.* 1956, Rev. 4582.

An attempt is made at developing an approximate method of calculating the inflow of gassy petroleum to a bore, with consideration of the associated water and the volume density of the petroleum. The known differential relationship between the weighted mean pressure and the weighted mean petroleum saturation, as well as empirical relationships for the gas and petroleum permeabilities are used to derive an approximate formula for the determination of the weighted mean pressure from the weighted mean petroleum saturation. The relationships obtained are presented graphically. Some conclusions are drawn concerning the influence of the saturation of the associated water with the petroleum yield of the stratum.

Courtesy Referativnyi Zhurnal S. N. Numerov, USSR

Translation, courtesy Ministry of Supply, England

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

AID P - 1772

Subject : USSR/Mining

Card 1/1 Pub. 78 - 10/26

Author : Charnyy, I. A.

Title : Determination of some reservoir parameters by means of curves of restored bottom hole pressure

Periodical : Neft. khoz., v.33, no.3, 40-48, Mr 1955

Abstract : The rate of restoring bottom hole pressure after output has been stopped gives valuable data on reservoir characteristics, such as: permeability K, conductivity Kh (permeability times the stratum thickness), productivity C etc. Formulae are presented giving the relationship between those parameters and corresponding curves are drawn. Practical examples illustrate this method of calculation. Charts

Institution: None

Submitted : No date

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

AID P - 3279

Subject : USSR/Mining

Card 1/1 Pub. 78 - 9/24

Authors : Krivonosov, I. V. and I. A. Charnyy

Title : Computation of the output of wells with fissures in adjoining strata

Periodical : Neft. khoz., v.33, #9, 40-47, S 1955

Abstract : The author makes a mathematical analysis of the effect of horizontal and vertical fissures on the output of petroliferous strata adjoining an oil well. Formulae for output computation are presented. Charts. 4 references, 3 Russian, 1948-1955.

Institution : None

Submitted : No date

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A.

ZHIGACH, K.F., professor, otvetstvennyy redaktor; MURAV'YEV, I.M., professor, redaktor; TIKHOMIROV, A.A., kandidat ekonomicheskikh nauk, redaktor; YEGOROV, V.I., kandidat ekonomicheskikh nauk, redaktor; CHARYGIN, M.M., professor, redaktor; DUNAYEV, F.F., professor, redaktor; NAMETKIN, N.S., dotsent, redaktor; BIRYUKOV, V.I., dotsent, redaktor; YEGOROV, A.F., dotsent, redaktor; CHARNYY, I.A., professor, redaktor; CHERNOZHUKOV, P.I., professor, redaktor; KUZMAK, Ye.M., professor, redaktor; DOKHNOV, V.N., professor, redaktor; PANCHENKOV, G.M., professor, redaktor; ALMAZOV, N.A., dotsent, redaktor; TAGIYEV, E.I., redaktor; GUREVICH, redaktor; ZHIGACH, K.F., redaktor; DAYEV, G.A., vedushchiy redaktor; GENNAD'YEVA, I.M., tekhnicheskiy redaktor

[The tenth scientific and technical conference, 1955] Desiataia nauchno-tekhnicheskaia konferentsiia, 1955 g. Leningrad, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, Leningradskoe otd-nie, 1956. 167 p. (MIRA 9:7)

1. Moscow. Moskovskiy neftyanoy institut. Nauchnoye studencheskoye obshchestvo

(Petroleum engineering) (Petroleum geology)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress (Cont.) Moscow, Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.
Mention is made of Chaplygin.

Khalilov, Z. I. (Baku). Solution of the Basic Mathematical Problem of Gasified Petroleum Filtration. 214

Charnyy, I. A. (Moscow). On an Integral Relation of the Filtration Theory and Some of its Applications. 215

Chernyy, G. G. (Moscow). Adiabatic Motions of Perfect Gas With High Intensity Shock Waves. 215-216

Mention is made of Sedov, Krashennikova and Burnova.

Shapiro, G. S. (Moscow). Application of Discontinuous Solutions in the Theory of Plasticity. 216

Sherman, D. I. (Moscow). Effective Methods of Integral Equations Applied to Some Problems in the Theory of Elasticity. 216

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APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, Isaak Abramovich; KRYLOV, A.P., redaktor; LOZBYAKOVA, Ye.S., redaktor; POLOSINA, A.S., tekhnicheskiy redaktor.

[Principles of subsurface hydraulics] Osnovy podzemnoi gidravliki. Moskva, Gos.nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi litry, 1956. 260 p. (MLRA 9:6)

1.Chlen-korrespondent AN SSSR (for Krylov).
(Water, Underground) (Hydraulics)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

1420. Krisonosov, I. V., and Chernyi, I. A., Calculation of the discharge from boreholes with fissuration of the adjacent stratum (in Russian), Neft. Khoz no. 9, 40–47, 1955; *Ref. Zh. Mekh.* no. 11, 1956, Rev. 7624.

Starting from simple hydraulic schematics, the limits are defined between which the values of the real discharge from a borehole are contained, for the case of fissuration of the stratum by the action of a hydraulic discontinuity. The cases of a vertical and a horizontal crack, respectively, are examined. It is suggested the discharge value for the calculation be assumed as half the sum of the highest and lowest values. As shown by the specimen calculations included in the work, the relative error in determining the discharge value for the case of a horizontal crack does not usually exceed 12–13%; and, for a vertical crack, 2%. Some qualititative conclusions are presented.

V. L. Danilov

Courtesy Referativnyi Zhurnal, USSR

Translation, courtesy Ministry of Supply, England

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

SOV/124-57-7-7459

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 7, p 2 (USSR)

AUTHOR: Charnyy, I. A.

TITLE: A Survey of the Works of Member of the Academy of Sciences L. S. Leybenzon in the Fields of Petroleum Mechanics and Fluid Mechanics (Obzor rabot akad. L. S. Leybenzona v oblasti neftyanoy mekhaniki i gidromekhaniki)

PERIODICAL: Tr. Mosk. neft. in-ta, 1956, Nr 16, pp 9-13

ABSTRACT: Bibliographic entry

Card 1/1

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

SOV/124-57-5-5794

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 5, p 108 (USSR)

AUTHORS: Orlov, V. S., Charnyy, I. A.

TITLE: Determination of Stratum and Well Parameters by Means of an Isobaric Chart (Opredeleniye parametrov plasta i skvazhin pri pomoshchi karty izobar)

PERIODICAL: Tr. Mosk. neft. in-ta, 1956, Nr 16, pp 113-124

ABSTRACT: The representation of the potential $\Phi = kp/\mu$ is used in the form of

$$\Phi(r,\theta) = \Phi_k + \frac{1}{4\pi}\sum_{i=1}^{N} q_i \log_e \frac{r^2 + \delta_i^2 - 2r\delta_i\cos(\theta-\alpha_i)}{\frac{\delta_i^2 r^2}{R_k^2} + R_k^2 - 2r\delta_i\cos(\theta-\alpha_i)} + \phi(r,\theta)$$

Here Φ_k is the mean potential along a perimeter $r = R_k$; $\phi(r, \theta)$ is a regular harmonic function; p is the pressure; k is the permeability; μ is the absolute viscosity; δ_i and α_i are the polar coordinates of the wells; $q = Q_i/h$ where Q_i is the yield of the well and h is the thickness of the stratum. The form of representation used above is

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SOV/124-57-5-5794

Determination of Stratum and Well Parameters by Means of an Isobaric Chart

suitable for a region which is homogeneous and isotropic relative to the parameter $\sigma = kh/\mu$ of a piecewise nonuniform stratum. A circle of radius r_h is drawn upon the isobaric chart of the deposit, and the pressure (and hence the potential) is determined along the points on the circumference of the circle according to the isobaric chart, which enables the author to set up the pressure function inside the circle. The parameter σ is determined by comparing the pressure values obtained by the method given above with the values given by the isobaric chart inside the circle. The method of determining the reduced radii of the wells is given likewise. A numerical sample is worked out. The method is incorporated in the book by I. A. Charnyy: Osnovy podzemnoy gidravliki (Fundamentals of Underground Hydraulics). Moscow, Gostoptekhizdat, 1956.

V. Ya. Bulygin

Card, 2/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

SOV/124-57-4-4413

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 4, p 79 (USSR)

AUTHORS: Charnyy, I. A., Chernikin, V. I.

TITLE: The Thermal Regime of the Gas-filled Space of Gasoline Storage Tanks (Teplovoy rezhim gazovogo prostranstva benzinokhranilishch)

PERIODICAL: Tr. Mosk. neft. in-t, 1956, Nr 17, pp 169-178

ABSTRACT: Bibliographic entry

Card 1/1

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 4, p 87 (USSR) SOV/124-57-4-4473

AUTHOR: Charnyy, I. A.

TITLE: On One Integral Relationship in the Theory of Seepage and on Some of Its Applications (Ob odnom integral'nom sootnoshenii teorii fil'tratsii i nekotorykh yego prilozheniyakh)

PERIODICAL: Tr. 3-go Vses. matem. s"yezda, Vol I, Moscow, AN SSSR, 1956, p 215

ABSTRACT: Bibliographic entry

Card 1/1

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A., (Moskva); ARKHANGEL'SKIY, V.A., (Moskva)

Calculating steady inflow in wells following a drop in the level of underground water. Insh. sbor. 23:147-157 '56. (MLRA 9:10)

(Water, Underground) (Soil percolation)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A., (Moskva)

Method for calculating the steady inflow of underground water in wells following a drop in the water level. Insh. sbor. 23: 158-163 '56.

(MLRA 9:10)

(Water, Underground) (Soil percolation)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

2345. Chorny, I. A., and Rozenberg, M. D., Borehold interaction in conditions of elastic infiltration (in Russian), *Trudi-Moskov. neft. in-ta* no. 12, 184-201, 1953; Rev. no. 959, *Ref. Zh. Mekh.*

[illegible] examination of the problem of interaction between boreholes under elastic conditions of infiltration of the [illegible]

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A.

AUTHORS: Buzinov, S.N. and Charnyy, I.A. (Moscow). 24-7-22/28

TITLE: On the movement of saturation discontinuities in the case of filtration of a two-phase liquid. (O dvizhenii skachkov nasyshchennosti pri fil'tratsii dvukhfaznoy zhidkosti).

PERIODICAL: "Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh Nauk" (Bulletin of the Ac.Sc., Technical Sciences Section), 1957, No.7, pp. 142-146 (U.S.S.R.)

ABSTRACT: It is established in this paper that under certain conditions not one but several saturation discontinuities can occur in the zone of movement of a two-phase liquid and a general method of calculation of their movements is outlined. The considerations are limited to the unidimensional movement in a pipe of a flow of a constant cross section. The considerations relate mainly to problems of water-petroleum displacements.
There are 4 figures and 8 references, 5 of which are Slavic.

1/1

SUBMITTED: January 14, 1957.

AVAILABLE:

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A.

24-9-27/33

AUTHORS: Mitel'man, B. I., Rozenberg, G.D. and Charnyy, I.A. (Moscow)

TITLE: On the theory of a hydraulic siren (turbotachometer). (K teorii gidravlicheskoy sireny (turbotakhometr).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1957, No.9, pp. 148-151 (USSR)

ABSTRACT: A method is described of determining the shape of the pressure impulse in an hydraulic siren as a function of the parameters of the equipment producing that impulse (probe) and also of the average increase in pressure produced by its presence. The problem can be formulated as follows: the flow rate of the liquid at the entry into the piping of the length L and the area of the cross section f (Fig.1) is known and equalling Q_0 = const. At the end of the piping a probe is fitted with a periodically varying area of the cross section of passage S. It is assumed that the law of change of the area S with time is given by means of a periodic function S = S(t) with a period T and that in this case the flow rate Q and the pressure p of the liquid at the lower cross section of the piping can be expressed by some functions of time, namely, Q = Q(t), p = p(t).

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

On the theory of a hydraulic siren.(turbotachometer). 24-9-27/33

The average values of the pressure $\bar{p}$ and of the flow rate $\bar{Q}$ in front of the probe can be expressed by means of the starting eqs.(1). The flow rate through the probe can be expressed by eq.(7), p.149 and from this a function $p = p(t)$ can be plotted. Application of the method is illustrated on a practical calculation when the probe is the hydro-turbotachometer of an instrument intended for measuring the r.p.m. of a turbo (oil) drill. There are 4 figures and 1 Slavic reference.

AVAILABLE: Library of Congress.

Card 2/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A.

KUZMAK, Ye.M., prof. doktor tekhn. nauk, red.; TARAN, V.D., prof., doktor tekhn. nauk, red.; ZHIGACH, K.F., prof., red.; MURAV'YEV, I.M., prof., red.; TIKHOMIROV, A.A., kand. ekon. nauk, red.; YEGOROV, V.I., kand. ekon. nauk, red.; CHARYGIN, M.M., prof., red.; DUNAYEV, F.F., prof., red.; CHERNOZHUKOV, N.I., prof., red.; CHARNYY, I.A., prof., red.; PANCHENKOV, G.M., prof., red.; DAKHNOV, V.N., prof., NAMETKIN, N.S., doktor khim. nauk, red.; ALMAZOV, N.A., dots., VINOGRADOV, V.N., kand. tekhn. nauk, red.; BIRYUKOV, V.I., kand. tekhn. nauk, red.; TAGIYEV, E.I., red.; GUREVICH, V.M., red.; GOR'KOVA, A.A., ved. red.; FEDOTOVA, I.G., tekhn. red.

[Proceedings of the conference of technical schools on the problems of new equipment for the petroleum industry] Mezhvuzovskoe soveshchanie po voprosam novoi tekhniki v neftianoi promyshlennosti. 1958. materialy... Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry. Vol. 3. [Manufacture of petroleum industry equipment] Neftianoe mashinostroenie. 1958. 222 p. (MIRA 11:11)
(Petroleum industry--Equipment and supplies)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHERNOZHUKOV, N.I., prof., doktor tekhn.nauk, red.; ZHIGACH, K.F., prof., otvetstvennyy red.; MURAV'YEV, I.M., prof., red.; TIKHOMIROV, A.A., kand.ekon.nauk, red.; YEGOROV, V.I., kand.ekon.nauk, red.; CHARYGIN, M.M., prof., red.; DUNAYEV, F.F., prof., red.; KUZMAK, Ye.M., prof., red.; CHARNYY, I.A., prof., red.; PANCHENKOV, G.M., prof., red.; DAKHNOV, V.N., prof., red.; NAMETKIN, N.S., doktor khim.nauk, red.; ALMAZOV, N.A., dots., red.; VINOGRADOV, V.N., kand.tekhn.nauk, red.; BIRYUKOV, V.I., kand.tekhn.nauk, red.; TAGIYEV, E.I., red.; GUREVICH, V.M., red.; ZAMARAYEVA, K.M., vedushchiy red.; MUKHINA, E.A., tekhn. red.

[Materials of the Interuniversity Conference on Problems of New Practices in the Petroleum Industry] Materialy mezhvuzovskogo soveshchaniya po voprosam novoy tekhniki v neftyanoy promyshlennosti. Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry. Vol.2. [Petroleum refining] Pererabotka nefti. 1958. 289 p. (MIRA 11:6)

1. Mezhvuzovskoye soveshchaniye po voprosam novoy tekhniki v neftyanoy promyshlennosti. 1956.
(Petroleum--Refining)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A.; YEVDOKIMOVA, V.A.; KOCHINA, I.N.

Increasing the ultimate oil recovery of imperfect wells containing bottom waters by means of simultaneous and separate extraction of water and oil. Izv. vys. ucheb. zav.; neft' i gaz no.2:59-68 '58. (MIRA 11:8)

1. Moskovskiy neftyanoy institut im. akad. I.M. Gubkina.
(Petroleum engineering)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CH ARAYEV, I. A.

11(4) PHASE I BOOK EXPLOITATION SOV/2124

Mezhvuzovskoye soveshchaniye po voprosam novoy tekhniki v neftyanoy promyshlennosti. Moscow, 1956

Razvedka i razrabotka neftyanykh i gazovykh mestorozhdeniy; materialy soveshchaniya, tom. 1 (Prospecting and Development of Oil and Gas Deposits; Papers of the Inter-Vuz Conference on New Techniques in the Petroleum Industry, Vol 1) Moscow, Gostoptekhizdat, 1958. 311 p. Errata slip inserted. 1,500 copies printed.

Eds.: I. M. Murav'yev, Professor, Doctor of Technical Sciences, and V. N. Dakhnov, Professor, Doctor of Geological and Mineralogical Sciences; Editorial Board: K. F. Zhigach, Professor (Resp. Ed.), I. M. Murav'yev, Professor, A. A. Tikhomirov, Candidate of Economical Sciences, V. I. Yegorov, Candidate of Economical Sciences, M. M. Charygin, Professor, F. F. Dunayev, Professor, N. I. Chernozhukov, Professor, Ye. M. Kuzmak, Professor, I. A. Charnyy, Professor, G. M. Panchenkov, Professor, V. N. Dakhnov, Professor, Doctor of Geological and Mineralogical Sciences, N. S. Nametkin, Doctor of Chemical Sciences, M. A. Almazov, Docent, V. N. Vinogradov, Candidate of Technical Sciences, V. I. Biryukov, Candidate of Technical Sciences, K. I. Tagiyev, and V. M. Gurevich; Executive Ed.: N. P. Dobrynina; Tech. Ed.: E. A. Mukhina.

PURPOSE: The book is intended for engineers and scientific personnel working in the petroleum industry and vtuzes. It may also serve as a textbook for advanced students of petroleum vtuzes.

COVERAGE: The book contains articles written by staff members of the Moscow, Groznyy, and Ufa Petroleum Institutes, the Kuybyshev and Azerbaydzhan Industrial Institutes, the UfNII (Ufa Scientific Research Institute), VNIIburneft' (All-Union Scientific Research Institute of Oil Drilling), KBNP (Design Office of Petroleum Instrument Making), the Bashneft Association (Bashkiriya Petroleum). These papers, read at the Mezhvuzy (Inter-Vuz) Scientific Conference, deal with new techniques in the petroleum industry introduced since 1956. Emphasis is given to the importance of efficient drilling, geophysical prospecting, working of oil and gas deposits, and the use of new devices employed in oil and gas exploitation. There are 52 references: 44 Soviet, and 8 English.

Zhigach, K. F., L. K. Mukhin, V. N. Demishev, and N. N. Goncharov [Moscow Petroleum Institute]. Petroleum-Base Drilling Fluids 92

The authors state that petroleum-base drilling fluids are being used to open productive horizons to maintain the penetration rate at the bottom-hole zone, and to increase the well output. The use of petroleum-base drilling fluids is particularly efficient for opening formations with high permeability and low pressure, where the absorption of a large amount of mud by the productive formation may prove dangerous. Petroleum-base drilling fluids also prove useful in opening formations with low permeability, particularly where the formation contains swelling clay. Petroleum-base drilling fluids produce good results in drilling under complex geological conditions and in drilling deep and directional wells.

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

Ryabinkin, L. A. [Moscow Petroleum Institute]. Revision of the RNP Seismic Method and the Grouping Methods 159
The author describes the seismic RNP method recently developed at the Institute's seismic laboratory with the aid of the VNII (All-Union Research Institute) of Geophysics and passed on to the petroleum industry. He mentions the results obtained in field and laboratory testing while using a basic modification of the RNP method.

Abdullayev, R. A. [Azerbaydzhan Industrial Institute]. Precise and Approximate Methods for Interpretation of Travel-Time Curves of Reflected Waves 178
The author records several approximate and precise analytical and graphic methods for determining effective speeds with the use of travel-time curves of reflected waves.

Datskevich, A. A. [KBNP - Design Office for Petroleum Instrument Making]. Equipment of Automatic-Geophysical Field Stations 196
The author states that his KBNP office cooperates with the design offices of the Neftepribor (Petroleum Instrument), Geofizika (Geophysics), and the Mytishchinskiy Instrument-Making Plants in manufacturing the largest amount of new industrial geophysical equipment in the petroleum industry. Because of the large demand by the industry, the volume produced by the KBNP office was inadequate and production was doubled in 1957. The KBNP has an experimental plant, a model shop, and laboratories.

Dakhnov, V. N., and A. I. Kholin [Moscow Petroleum Institute]. On the Problem of Quantitative Evaluation of Residual Oil Saturation of a Reservoir Carried Out by Radioactive Methods 209
The authors state that the determination of the type of liquid saturating the formation reservoir encased in the well presents one of the major problems for advancing the technology of petroleum exploration. Constant observation of the movements and changes in water-oil contact in all wells is essential, and the radiometric method, developed between 1953 and 1955 at Laboratory Nr 1 of the MNI (Moscow Petroleum Institute), which helps determine the type of liquid saturating the formation, answers the purpose.

Barsukov, O. A. [Moscow Petroleum Institute]. Some Theoretical Problems on Neutron Methods for Separating Oil-bearing Formations From Water-bearing Formations 218
The author refers to the experiments conducted at the MNI and other organizations which contributed to the development of methods to separate oil-bearing from water-bearing formations; he describes several physical processes that take place during neutron study methods and presents pertinent evaluating calculations.

Charnyy, I. A. [Moscow Petroleum Institute]. One of the Integral Equations of the Filtration Theory and Some of its Applications 230
The author gives a detailed description and graphic calculations of an integral equation of the filtration theory.

Belash, P. M. [Moscow Petroleum Institute]. On Equations Used for Determining Yields 248
The author shows the connection between differential equations of filtration and the equations of yields.

Rykhachev, G. B. [Groznyy Petroleum Institute]. Determining Pressure of an Oil-bearing Formation Having a Low Gas Saturation 257
The author reviews filtration in mixed liquid and gas phase formations and submits equations.

Bagdasarov, S. Kh. [Kuybyshev Industrial Institute]. The Role and Significance of A Hydraulic Seal in Exploitation of Oil Deposits 266
The author is opposed to the exploitation of new deposits with dissolved gas in petroleum production under prevailing techniques during the initial period, particularly when it is intended to correct the condition by secondary methods. This system has been responsible for depleting many old petroleum deposits (Baku, Groznyy, Krasnodar, etc.).

(9

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A.

11(2,4) PHASE I BOOK EXPLOITATION SOV/2536

Moscow. Institut neftekhimicheskoy i gazovoy promyshlennosti.

Problemy nefti i gaza (Oil and Gas Problems) Moscow, Gostoptekhizdat, 1959. 342 p. (Series: Its: Trudy, vyp 24) Errata slip inserted. 2,000 copies printed.

Sponsoring Agency: Ministerstvo vysshego obrazovaniya SSSR.

Exec. Ed.: G. F. Morgunova; Tech. Ed.: I. G. Fedotova; Editorial Board: K. F. Ehigach, Professor (Resp. Ed.), I. M. Mirev'yev, Professor, A. A. Tikhomirov, Candidate of Economic Sciences, V. N. Vinogradov, Candidate of Technical Sciences, M. M. Charygin, Professor, F. F. Dunayev, Professor, I. A. Charnyy, Professor, V. N. Dakhnov, Professor, G. M. Paschenkov, Professor,

PURPOSE: This collection of articles is intended for specialists in the petroleum and gas industry. It will also be of interest to scientific research institutes, teachers and students of vuzes.

COVERAGE: This collection of articles reviews problems connected with natural and synthetic gas production. A number of articles are devoted to the study of regional oil- and gas-bearing zones, the crystalline beds underlying the Volga-Ural petroliferous region, tectonics of the Caspian depression, seismic prospecting, oil well logging, development of oil and gas fields, petroleum-bearing formations and their physicochemical characteristics, and petroleum engineering. Other articles deal with gas turbine engines and their possible use in the oil and gas industry, the production of carboxymethylcellulose compounds, the application of ionic exchange tars to the organic catalysis, continuous coking of heavy petroleum residues, (fluidization), the improvement of lube oil production, and the influence of acid esters on properties of lubricating oil and grease. The book contains a number of photographs, tables, flow sheets, and diagrams, among which those relating to coal gasification and conversion of heavy petroleum residues over a fluidized bed catalyst deserve special attention. References accompany individual articles.

Florenskiy, V. P. (Deceased), T. A. Lapinskaya, and V. S. Kuyazev. Some Results of the Petrographic Study of Crystalline Beds Underlying the Volga-Ural Petroliferous Province 65

Kazakov, M. P. Tectonic Pattern of the Caspian Depression and Adjacent Regions 85

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Larionov, V. V. Study of Porosity and Saturation of Oil Reservoir Rocks by Applying Radiometric Methods in Oil Well Logging 107

Shobelkachev, V. N., N. N. Baranovskaya, G. L. Govorova, and M. A. Guseynzade. Investigations Made by the Department of Theoretical Mechanics in the Field of Subsurface Hydrodynamics and the Development of Petroleum-Bearing Strata 122

Charnyy, I. A., and I. D. Umrikhin. Determination of Parameters of the Formation Made on the Basis of Observations of the Oil Well Unstabilized Inflow 140

Kershenbaum, Ya. M. Manufacturing Cone-type Rock Bits 146

Kuznak, Ye. M., A. I. Kurdin, and K. P. Yefremova. Increasing the Wear Resistance of Rock Bits by Reinforcing Them with a Hard Metal Alloy 156

Tomlenov, A. D. Stability of Biaxial Plastic Tension 170

Markhasin, E. L. (Deceased), and A. A. Petrosyants. Cutting Temperature in Round Milling Performed by Plasma Cutters 174

Belokon', N. I. Thermodynamic Processes of Gas Turbine Units 183

Porshakov, B. P. Comparable Characteristics of Gas Turbine Unit Systems 233

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

SOV/24-59-1-13/35

AUTHORS: Filinov, M.V., and Charnyy, I.A., (Moscow)

TITLE: Approximate Method of Calculating the Injection of a Gas into a Water-Bearing Stratum and its Relation to Some Exact Solutions (Priblizhennyy metod rascheta nagnetaniya gaza v vodonosnyy plast i yego sravneniye s nekotorymi tochnymi resheniyami)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, Energetika i Avtomatika, 1959, Nr 1, pp 100-103 (USSR)

ABSTRACT: The pressure in a water-bearing stratum is given by the heat-conductivity type equation with boundary conditions on the moving boundary of division, which is a circle of variable radius $R_0(t)$. The solution of this equation is difficult and, as far as is known, the problem has not been solved although Berigin (Ref 3) has obtained a solution for $R_0(0) = 0$. It is therefore necessary to use approximate methods such as successive variations from stationary states. In this way the equation

$$\frac{p^0(v - u)}{u - 1}\left[\frac{\tau}{u\ln(1 + \tau/u)} - 1\right] = 1 \qquad (7)$$

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SOV/24-59-1-13/35

Approximate Method of Calculating the Injection of a Gas into a Water-Bearing Stratum and its Relation to Some Exact Solutions

is obtained where

$$\frac{R_0^2(t)}{R_0^2(0)} = u, \quad \frac{4at}{R_0^2(0)} = \tau, \quad \frac{p_k}{K} = p^0, \quad \frac{V_H(t)}{V_H(0)} = v$$

p_k = initial pressure in water-bearing stratum
K = elasticity modulus of the liquid in the elastic porous medium
$V_H(t)$ = supply of gas at time t; a = coefficient of pressure conductivity of the water bearing stratum given by $a = kK/m\mu_B$, m = porosity, k = permeability, μ_B = viscosity of water. For $R_0(0) = 0$

$$\left[\frac{\alpha^{-1}}{\ln(1 + \alpha^{-1})} - 1\right] = \frac{K}{\Delta p} \qquad (9)$$

where $p(t) - p_k = \Delta p$, $R_0^2(t)/4at = \alpha$
This is compared with the exact solution obtained on the basis of Berigin's work (Ref 3) and good agreement

Card 2/3

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SOV/24-59-1-13/35

Approximate Method of Calculating the Injection of a Gas into a Water-Bearing Stratum and its Relation to Some Exact Solutions

is obtained. There is 1 figure, 1 table and 5 Soviet references.

SUBMITTED: 3rd June 1958

Card 3/3

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

SOV/24-59-3-16/33

AUTHOR: Charnyy, I. A. (Moscow)

TITLE: Movement of the Dividing Boundary Between Two Liquids in a Porous Medium

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1959, Nr 3, pp 104-120 (USSR)

ABSTRACT: The paper is a continuation of previous work (Refs 3-5). The problem of the movement in a porous medium of the dividing boundary between two liquids of different viscosities and densities has only been solved in simple cases of rectilinear and radial movement. The problem is, however, of considerable practical importance, since it is connected with the injection of gas into water bearing strata to form subterranean gas holders and with the working of petroleum bearing strata, etc. Approximate methods of solution include those based on linearisation of the boundary conditions at the dividing surface (Refs 1-4), and on the suggestion of Mikhaylov (Ref 5) that the permeability k along the stratum differs from that perpendicular to the stratum (k_y). The limiting cases $k_y = 0$ and $k_y = \infty$ have been investigated (Refs 4 and 5) and applied by Pirverdyan (Ref 6) to the problem of the replacement of petroleum by water, when

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SOV/24-59-3-16/33

Movement of the Dividing Boundary Between Two Liquids in a Porous Medium

the viscosities differ, but the densities are the same. If the viscosities and densities both differ, the problem is considerably more complicated (Ref 5), and has not yet been solved. In the present paper, it is shown that with a special law for dependence of total discharge on time [$Q(t) = At^{-0.5}$ for rectilinear replacement and $Q(t) = \text{const}$ for radial replacement], and without taking mutual permeability of the phases into account, the problem reduces to the solution of an ordinary second-order non-linear differential equation which in general can be integrated numerically to give any desired accuracy. The approximate solutions are in satisfactory agreement with known accurate solutions of Kochina (Ref 1) and Barenblatt (Refs 7 and 8). The solution shows that after a sufficiently long time, for which a quantitative criterion is given, the movement of the dividing boundary is determined mainly by the difference in viscosities and to an appreciably smaller extent by the

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SOV/24-59-3-16/33

Movement of the Dividing Boundary Between Two Liquids in a Porous Medium

difference in densities. The influence of phase permeability on the nature of the replacement is found approximately using the theory of filtration of two-phase mixtures given by Buckley and Leverett (Ref 9). There are 6 figures and 12 references, 11 of which are Soviet and 1 English.

SUBMITTED: July 4, 1958.

Card 3/3

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A.; UMRIKHIN, I.D.

Studying the unstable flow toward wells to determine the parameters of a layer. Trudy MINKHiGP no.24:140-145 '59.

(MIRA 13:3)

(Oil reservoir engineering)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

ZHIGACH, K.F., prof., otv.red.; MURAV'YEV, I.M., prof., red.; TIKHOMIROV, A.A., kand.ekonom.nauk, red.; VINOGRADOV, V.N., kand.tekhn.nauk, red.; SIDORENKO, N.V., red.; BRENTS, A.D., red.; CHARYGIN, M.M., prof., red.; DUNAYEV, F.F., prof., red.; CHARNYY, I.A., prof., red.; CHERNOZHUKOV, N.I., prof., red.; KUZMAK, Ye.M., prof., red.; DAKHNOV, V.N., prof., red.; PANCHENKOV, G.M., prof., red.; NAMETKIN, N.S., prof., red.; TAGIYEV, E.I., prof., red.; BIRYUKOV, V.I., kand. tekhn.nauk, red.; YEGOROV, V.I., kand.tekhn.nauk, red.; ALMAZOV, N.A., dotsent, red.; GUREVICH, V.M., red.; ISAYEVA, V.V., vedushchiy red.; POLOSINA, A.S., tekhn.red.

[Development of the gas industry of the U.S.S.R.; from the proceedings of the Interuniversity Scientific Conference on the Problems of the Gas Industry] Mezhvuzovskaia nauchnaia konferentsiia po voprosam gazovoi promyshlennosti. Razvitie gazovoi promyshlennosti SSSR; materialy. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1960. 405 p. (MIRA 13:11)

1. Mezhvuzovskaya nauchnaya konferentsiya po voprosam gazovoy promyshlennosti. 2. Glavgaz SSSR (for Brents). 3. Moskovskiy institut neftekhimicheskoi i gazovoi promyshlennosti im. akad.Gubkina (for Charygin, Charnyy).

(Gas industry)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I. A., STEKLYANIN, Yu. I. (Moscow)

"Three-phase Flows Through Porous Media."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A.; DONETSKIY, V.N.; CHEN' CHZHUN-SYAN

Equivalent saturation in the solution of problems on two-phase flow. Izv.vys.ucheb.zav.; neft' i gaz 3 no.2:113-119 '60. (MIRA 13:6)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. akad. I.M.Gubkina.
(Oil reservoir engineering)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

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PHASE I BOOK EXPLOITATION SOV/5955

Charnyy, Isaak Abramovich

Osnovy gazovoy dinamiki (Fundamentals of Gas Dynamics) Moscow, Gostoptekhizdat, 1961. 199 p. Errata slip inserted. 6200 copies printed.

Executive Ed.: G. Ya. Solganik; Tech. Ed.: V. V. Voronova.

PURPOSE: This textbook is intended for students at schools of higher education, especially for future engineers of the petroleum and gas industries.

COVERAGE: The book deals with the basic laws of gas dynamics. Special attention is given to problems of unsteady flow in gas mains and in horizontal and nonhorizontal conduits, taking into account the velocity head and properties of real gases. The author thanks I. N. Kochina, Candidate of Physics and Mathematics, and B. I. Mitel'man, Candidate of Technical Sciences. There are 62 references: 55 Soviet, 6 English, and 1 French.

Card 1/5

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

RYZHIK, V.M. (Moskva); CHARNYY, I.A. (Moskva); CHEN' CHZHUN-SYAN [Chên Chung-hsiang] (Moskva)

Some accurate solutions of equations of undsteady flow of a two-phase fluid. Izv. AN SSSR. Otd. tekh. nauk.Mekh. i mashinostr. no. 1:121-126 Ja-F '61. (MIRA 14:2)
(Oil well flooding)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A.

Percolation in a layer with an impermeable top and bottom and a slightly permeable interlayer. Trudy MINKHiGP no.33:122-130 '61. (MIRA 15:1)

(Soil percolation)
(Oil reservoir engineering)

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10.4100

26.2181

20316

S/020/61/137/001/006/021
B104/B209

AUTHORS: Charnyy, I. A., Vil'ker, D. S. (Deceased), Mitel'man, B. I., and Rozenberg, G. D.

TITLE: Two-phase supersonic flow

PERIODICAL: Doklady Akademii nauk SSSR, v. 137, no. 1, 1961, 48

TEXT: It is known that the temperature of a wall in a supersonic flow differs only little from the stagnation temperature of the flow at $Pr \approx 1$. However, a two-phase flow consisting of gas particles and particles of frozen liquid may be assumed to arise when a liquid with a freezing point considerably higher than the gas temperature is introduced into the gas flow. The temperature of the wall in the flow must then be much lower than the stagnation temperature of the gas. In order to check this assumption, an experiment was carried out at the Hydromechanical Laboratory of Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov). Through a Laval nozzle, water was introduced into a supersonic airstream ($M = 1.2$ and $M = 3$). The stagnation temperature of the airstream and the temperature of the

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Two-phase supersonic flow

water were both 15°C. The consumption of air and water by weight in these experiments was 0.12 and 0.02 kg/sec, respectively. Within 8-12 sec, a steel rod placed in the stream became covered by a crust of ice that was solidly bonded to the rod. Thickness and adhesive strength of this crust rise with the speed of flow. This phenomenon can probably be utilized in industry for cooling high-pressure gas wells and mains, as well as for cooling surfaces in a gas stream. A quantitative theory of this phenomenon will be presented later. [Abstracter's note: Complete translation.]

ASSOCIATION: Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. I. M. Gubkina (Moscow Institute of the Petrochemical and Gas Industry imeni I. M. Gubkin)

PRESENTED: June 10, 1960, by P. Ya. Kochina, Academician

SUBMITTED: June 9, 1960

Card 2/2

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

S/179/62/000/006/019/022
E191/E481

AUTHOR: Charnyy, I.A. (Moscow)

TITLE: Contribution to the theory of the vortex refrigerator

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, no.6, 1962, 148-153

TEXT: Vortex refrigerators based on the Rank effect have a low efficiency but can be used when an otherwise wasted pressure drop is available, such as in winning natural gas and in long distance gas pipelines. Various explanations for the effect have been advanced. The best founded is stated to be contained in the paper by L.A.Vulis (Izv. AN SSSR, OTN, no.10, 1957). By integration of the equations of motion and energy in a rotating flow of viscous gas, it was shown that at a Prandtl number exceeding 0.5 the gas layers near the axis cool down. The working principle is discussed in the present paper and an approximate theory of vortex tube operation is given. A gas enters a tube tangentially at the periphery. The tube has a diaphragm at one end and a gate valve at the other. The cooled air flows through the diaphragm and the heated air through the gate valve. An evaluation is

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given for the temperature drop between the stagnation temperatures of the entering and refrigerated air streams. It is assumed that the air enters through an annular slot forming a vortex. In the axial cross-section the flow lines create a mushroom pattern. The stalk region pointing towards the diaphragm contains the air which has performed work upon the remainder and thereby cools down. It is also found that a core rotating as a solid body exists. With this flow model, the temperature drop can be predicted on the basis of few assumptions. An important part is played by the entry and exit pressures which, it is stated, can be evaluated approximately from the resistances of the diaphragm and valve. The analysis is compared with experiments originally reported by Hilsch, yielding a reasonably good agreement. The derivation by the methods of conformal mapping of the basic flow pattern which underlies the approximate theory is given. There are 6 figures and 1 table.

SUBMITTED: July 2, 1962

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

MYASNIKOV, Yu.A. (Moskva); CHARNYY, I.A. (Moskva)

Approximate method for calculating gas injection into a water-bearing layer through a straight line of wells. Izv.AN SSSR.-Otd.tekh.nauk.Mekh. i mashinostr. no.4:47-51 Jl-Ag '62. (MIRA 15:8)

(Gas wells)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A.; KHOLIN, A.I.; EYKHMAN, V.N.; SEVOST'YANOV, M.M.

Dynamics of draining of a layer in the construction of underground gas reservoirs. Gaz.prom. 7 no.1:51-54 '62. (MIRA 15:1)
(Gas, Natural--Storage)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A. (Moskva)

Calculating the motion of a gas volume in an unlimited water-bearing layer. Izv.AN SSSR.Otd. tekh.nauk.Mekh.i mashinostr. no.5:51-58 S-O '62. (MIRA 15:10)

(Fluid dynamics)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A. (Moskva)

Theory of the vortex refrigerator. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.6:148-153 N-D '62. (MIRA 15:12)
(Refrigeration and refrigerating machinery)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A.; MITEL'MAN, B.I.; ROZENBERG, G.D.

Cooling capacity of two-phase flows. Gaz. prom. 7 no.3:50-52 '62. (MIRA 17:8)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A.; MUKHIDINOV, N.M.

Change in the reservoir pressure in the development of a gas field in an unbounded water-bearing bed. Gaz. prom. 7 no.11: 9-13 N '62. (MIRA 17:9)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, Isaak Abramovich; TUMASHEV, G.G., prof., retsenzent;
BORISOV, Yu.P., doktor tekhn. nauk, retsenzent;
KAYESHKOVA, S.M., ved. red.; POLOSINA, A.S., tekhn.red.

[Underground fluid dynamics] Podzemnaia gidrogazodinamika.
Moskva, Gostoptekhizdat, 1963. 396 p. (MIRA 17:2)

1. Kafedra gidromekhaniki Kazanskogo gosudarstvennogo universiteta im. V.I.Lenina (for Tumashev).

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A.; YEVDOKIMOVA, V.A.; KOCHINA, I.N.

Determining the free output of gas wells. Gaz. prom. 8 no.4: 3-6 '63. (MIRA 17:10)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A.; IVANOVA, Ye.L.

Increasing the capacity of pipelines through gas injection. Transp. i khran. nefti no.7:3-5 '63. (MIRA 17:3)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. akademika Gubkina.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A.; ASTRAKHAN, D.I.; VLASOV, A.M.; TOMEL'GAS, V.A.

Commercial test gas injection into a water-bearing bed through a series of wells. Gaz. prom. 9 no.10:41-46 '64.
(MIRA 17:12)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNY, I. A. (Moscow)

"Flow of gas volume through water-saturated porous media".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308130008-8

CHARNYY, I.A.; TOMEL'GAS, V.A.; ASTRAKHAN, D.I.

Forming an underground gas-storage reservoir by injecting gas into a horizontal aquifer through a group of wells. Gaz. prom. 10 no.7:46-48 '65. (MIRA 18:8)

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CHARNYY, I.A.

Effect of local relief and motionless liquid and gas inclusions on the flow-through capacity of pipelines. Neft. khoz. 43 no.6: 51-55 Je '65. (MIRA 18:7)

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CHARNYY, M., inzhener.

Formula for determining the capacity of a belt conveyor drive. Muk.-elev.prom. 20 no.6:10-11 Je '54. (MLRA 7:8)

1. NIIProdmash.
(Conveying machinery)

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CHARNYY, M.S.

The KPK-A press for briqueting vegetables. Biul.tekh.-ekon.inform. no.2:49-51 '58. (MIRA 11:4)
(Briquets) (Vegetables, Dried)

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CHARNYY, M.S.

The TMZ freight car loading device. Biul.tekh.-ekon.inform. no.2:61-62 '58. (MIRA 11:4)
(Railroads—Freight)

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CHARNYY, M.S.

The PZA automatic machine for packing lump sugar. Biul. tekh.-ekon. inform. no.3:55-56 '58. (MIRA 11:6)

(Sugar machinery)

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CHARNYY, M.S.

The 3S automatic roller mills. Biul.tekh.-ekon.inform. no.10: 57-58 '58. (MIRA 11:12)
(Milling machinery)

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CHARNYY, M.S.

The DPA-DSA equipment for grinding mixed feed. Biul.tekhrekon. inform. no.10:66-68 '58. (MIRA 11:12)
(Feed grinders)

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CHARNYY, M.S.

The DAM automatic rotary syrup-proportioning machine. Biul. tekh.-ekon.inform. no.12:48-49 '58. (MIRA 11:12)
(Syrups (Carbonated beverages))

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CHARNYY, M.S.

The MPM-1-type delinting machine. Biul.tekh.-ekon.inform. no.11:57-59 '59. (MIRA 13:4)
(Cotton machinery)

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CHARNYY, M.; LEYKIN, A.

The new All-Union State Standard for belt bucket conveyors for grain and flour. Muk.-elev. prom. 29 no.9:26-27 S '63. (MIRA 17:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy i eksperimental'no-konstruktorskiy institut prodovol'stvennogo mashinostroyeniya.

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CHARYYEV, R.

Carp (Cyprinus carpio L.) as an object of pond farming in the Turkmen S.S.R. Izv. AN Turk. SSR. Ser. biol. nauk no.1:60-66 '64. (MIRA 17:9)

1. Institut zoologii i parazitologii AN Turkmenskoy SSR.

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