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Monsanto

Anniston Plant

TECHNICAL SERVICES DEPARTMENT

MONTHLY REPORT

Anniston

Plant Copy*
File Copy
J. C. Landwehr*

*PR&D Mid-month Report Attached

General Offices

D. Danna* (5)
C. F. Luecke*/
R. E. Howard
W. R. Richard*
J. R. Savage*
J. A. Stephens*

Summary

NOVEMBER, 1971

Ag Division

Winterization of Parathion Department for production of Methyl in cold weather is progressing well. Project is 70-75% complete at month's end. Expect completion of all but "turn-around" work by Dec. 20.

Preliminary economic studies completed on Residue Recycle and Sulfur Settling schemes for improved PCT yield and sulfur removal. Further lab studies are in progress prior to pilot plant proposal early in 1972.

Premise prepared for expansion and upgrading of Plasticizer Blending and shipping facilities. Project in preparation for additional tankage, loading docks and truck scales.

AFE 3887 - Recycle PNP Waste Water - ($20.7M N.F.C., $1.1 M Expense) savings, $8.0M B.T. and improved pollution control, and AFE 3889 - Improve Ventilation of Niran Emergency Generators - ($2.2M N.F.C., $0.4M Expense) - both were forwarded for approval.

The automatic steam controller on No. 1 Intermediate Still continues to show a 3.5% reduction in cycle time and a 2% increase in yield per batch. A process analysis revealed major causes of plugged condensers. The automatic features of the steam controller are being expanded to reduce the effect of these factors. Changes are being made in the chlorinator to permit automatic full-batch nitrogen sparging.

PR&D is currently evaluating the improved Methyl PCT process described in Ag Research Progress Report 2104 (1). Primary emphasis is directed toward developing thermal stability data.

Polyphenyls

The Santowax O storage tank project (AFE 3853) was approved in October (NFC - $42M). All CED drawings pertaining to the tank installation were received and reviewed by Production, Maintenance, and TSD. Additional drafting will be made by TSD. The tank will arrive by mid-December and project installed durin- January 1972.

DSW 551562

J-306 REV. 11/1/1968

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The cumene injection AFE has been delayed to March 1972 due to decreased need for Polyphenyl production. Justification now hinges on elimination of Acetone as a promoter and source of acetic acid corrosion, plus a source of oxygen bearing compounds which are highly toxic upon chlorination.

Report No. 1 - 109-1175 on use of the Partek Liqua-Blaster was issued. Maintenance will initiate an AFE to purchase a 6,000 psi unit for cleaning fouled heat exchangers. TSD will perfect a method for measuring the effect of high pressure water cleaning of the Polyphenyl Tubular Unit before they are put on stream.

The Standby Propane Fuel System was successfully started up on November 10 after replacement of the defective vaporizer tube bundle by the vendor. Some minor items are yet to be completed, such as construction of a permanent test flare. However, the unit has logged over 100 hours of actual plant operation since the year's first gas curtailment on November 23.

HB-40

A PR&D study to develop hydrogenation rate data for WCM at pressures above the currently employed 300 psi has been completed. A report will be issued by 12-6-71.

Pollution Control

The E.P.A. questionnaire (deadline December 1) was completed and submitted to the Washington office November 30. Approximately 14 samples were analyzed for PCB content for the Nitro, W. Va. plant on samples from the calcium M.H.A. department.

Quality Control

The plant quality score was 91.7, up 0.8 from October, with a YTD score of 86.8. November was third successive month showing improvement. Niran had a perfect score for the second successive month.

J. C. Landwehr

/dp

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PLANT LABORATORIES

ANALYTICAL AND QUALITY CONTROL - S. O. Kemp

Complaint Report

Quality

None

YTD Complaints/100 Shipments 0.275

Target 0.20

1970 Manpower/Sample	0.60
1971 YTD Manpower/Sample	0.40
1970 $/Manhour	16.50
1971 YTD $/Manhour	8.53

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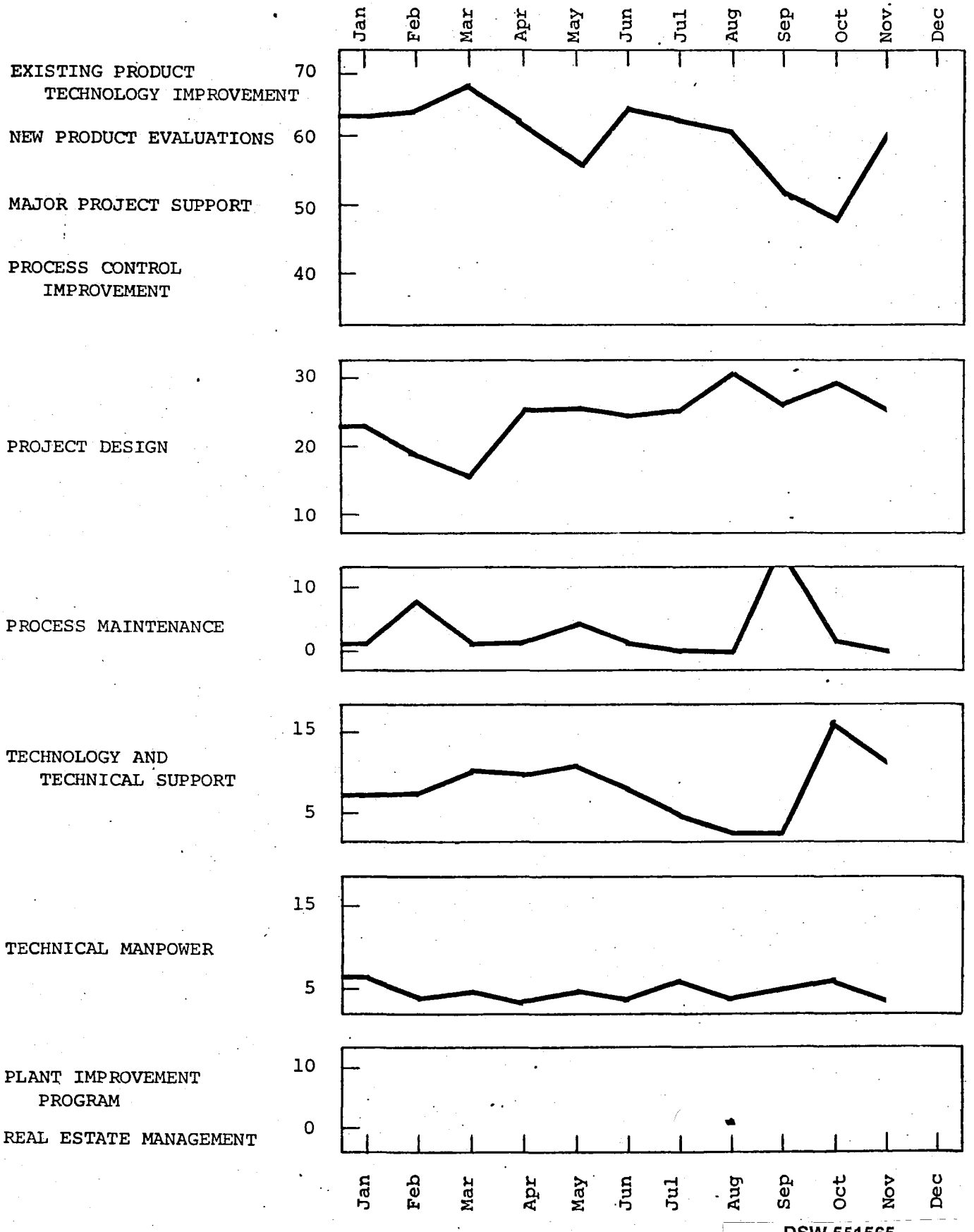
1971 DISTRIBUTION OF TIME BY TECHNICAL SERVICE



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MID-MONTH REPORT
PR&D LABORATORY
ANNISTON PLANT

PROJECT TITLE: Methyl PCT Residue

PERIOD ENDING: November 15, 1971

CHEMIST: G. L. Arnett

PR&D progress report issued 11/5/71 -- Report No. 5, Job No. 446-603.

G. L. Arnett

/dp

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MID-MONTH REPORT
PR&D LABORATORY
ANNISTON PLANT

PROJECT TITLE: Therminol OM-16

PERIOD ENDING: November 15, 1971

CHEMIST: G. L. Arnett

Therminol OM-16 replaced PCB based Therminol in the solid Aroclor system 10-8-71. After one month's use (11-8-71) the viscosity only increased slightly from 46.5 SUS @ 210°F to 48.5 SUS. Due to the viscosity of OM-16, some operating problems have occurred due to colder weather; however, overall the OM-16 has been satisfactory as a Therminol replacement in this system.

G. L. Arnett

/dp

MID-MONTH REPORT
PR&D LABORATORY
ANNISTON PLANT

PROJECT TITLE: WCM Optimization Studies

PERIOD ENDING: November 15, 1971

CHEMIST: I. Ransaw

WCM is currently manufactured by hydrogenating Santowax Q to approximately 40%. This hydrogenation time is approximately 3 times that required for HB-40. From a production standpoint, it is highly desirable to reduce the WCM cycle time. Hydrogenation studies of Santowax Q in the lab indicate that a considerable part of the reaction time is used in getting from 30% to 40% hydrogenation level. Hence the cycle time could be significantly reduced by reducing the hydrogenation level provided the product quality is retained. To this end, Santowax Q samples containing 2%, 10.2% and 15% terphenyl, respectively, were each hydrogenated to a 30%, 35% and 38% level for subsequent application testing. Santowax Q samples containing 2% terphenyl showed signs of crystallization at the 30% and 35% H_2 levels.

Reaction rate curves for Santowax Q hydrogenation were developed at 300 psi and 500 psi H_2 pressure. These data were developed by hydrogenated samples of Santowaw Q at both 300 psi (control) and 500 psi pressure with catalyst charge and all other conditions held constant. These results are plotted in Graphs 1 and 2 as reaction time versus the refractive index of the hydrogenated mass. In previous work done by Anniston PR&D, the actual hydrogen uptake was determined as a function of the refractive index of the hydrogenated mass; hence an actual reaction rate curve could be plotted from the data if necessary. Graph 1 represents the average of 4 runs while Graph 2 represents the average of 3 runs. Results indicate that a 90 minute reaction time is required to hydrogenate Santowax Q to a 1.5700 R.I. at 300 psi, while only 37 minutes is required at 500 psi. Plans are now to hydrogenate plant Santowax Q at 700 and 900 psi.

I. Ransaw

/dp

Att.

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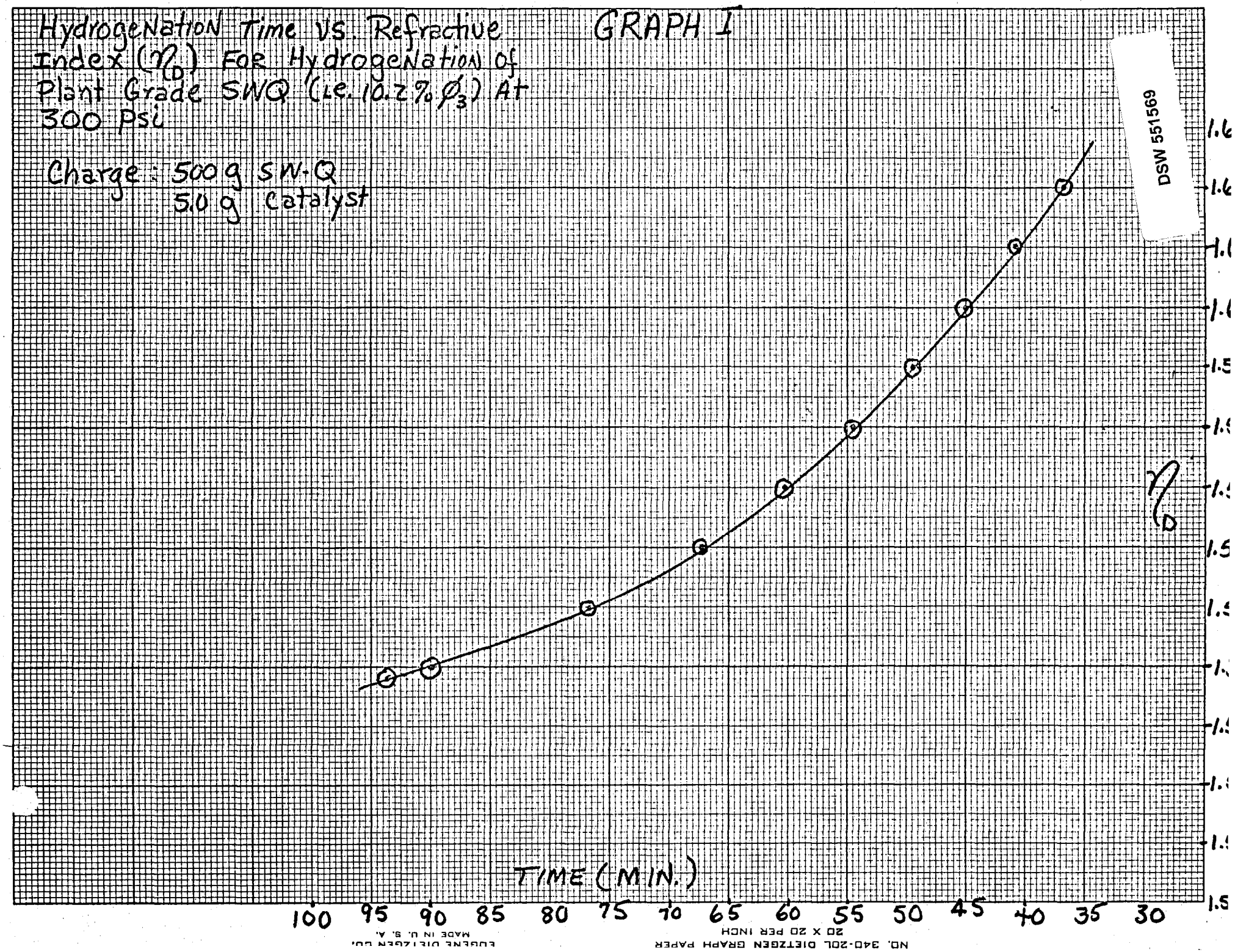

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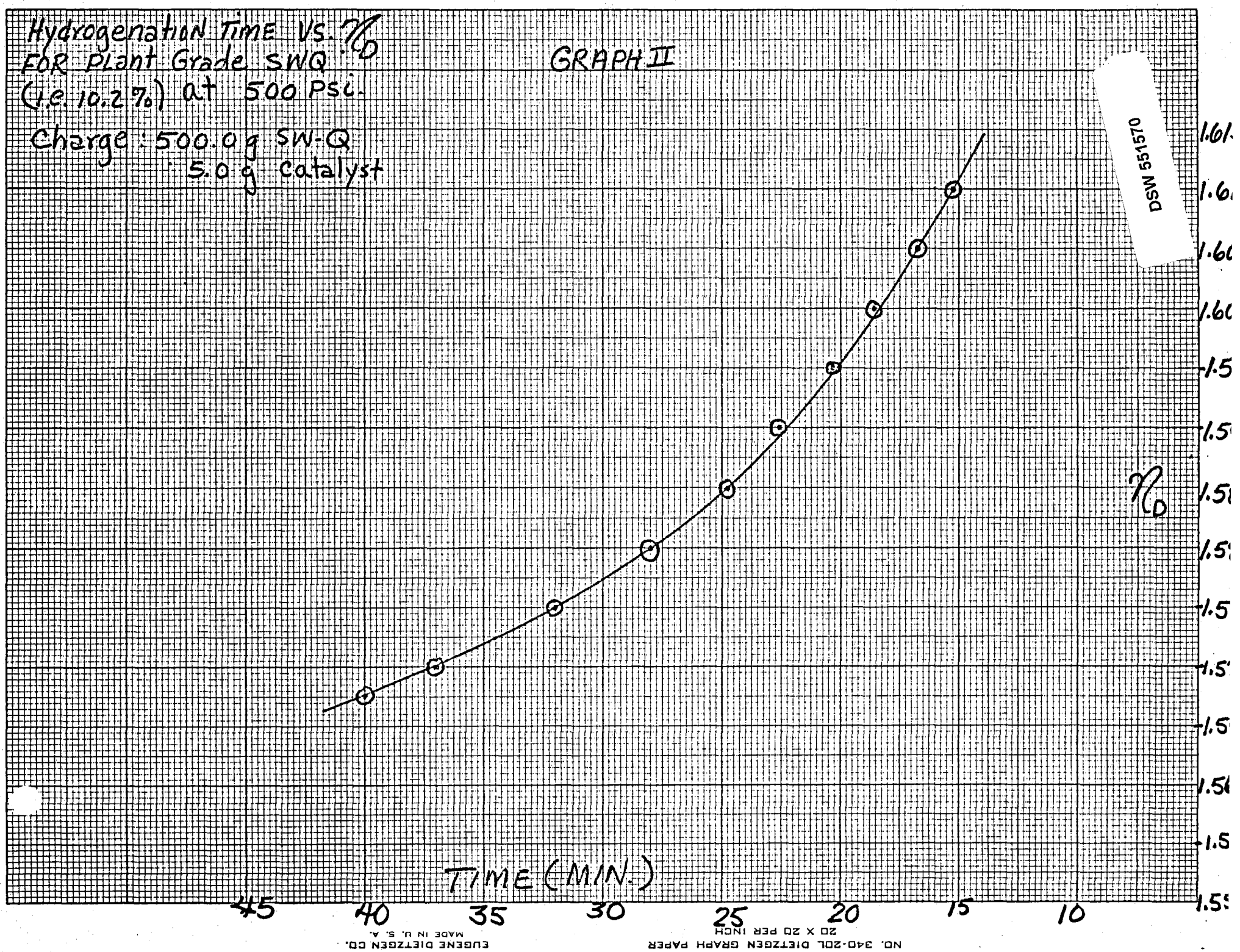
Hydrogenation Time Vs. n_D
For Plant Grade SWQ
(i.e. 10.2%) at 500 psi.

Charge: 500.0 g SW-Q
5.0 g catalyst

GRAPH II



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