



DEPARTMENT OF PETROLEUM ENGINEERING

Ref. No.: PU/SOE/PET/SD/HMTPE/2022-23/CIR/01

Date: 11/10/2022

Circular

Academic Year: 2022 – 2023

Course: PET2008

Semester: 6th

Dear students of 6PET-1,

It is to inform you all that a “Experiential Learning” activity for the course **PET2008 Heat and Mass Transfer for Petroleum Engineering** is schedule on 18/10/2022, from 9:00 AM to 10:40 AM (OFFLINE MODE).

It is mandatory for all the student to remain present during the activity session and take part in numerical solving.

Dr. Abhinav Kumar
Instructor In-charge

REPORT ON EXPERIENTIAL LEARNING


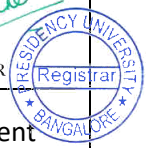
Circular Date and No.	Dtd: 11/10/2022 PU/SOE/PET/SD/HMTPE/2022-23/CIR/01	Date of Event	18.10.2022
Type of learning	Skill development	Event Type:	Experiential Learning
Mode of Event:	Offline	No. of Participant(s):	27
Course Code/ Course Name	PET2008 Heat and Mass Transfer for Petroleum Engineering		
Department	Department of Petroleum Engineering		
Instructor In charge	Dr. Abhinav Kumar Assistant Professor, Department of Petroleum Engineering		

Event objective	The event was conducted to test the knowledge of students on the topic related to the experiential learning in petroleum industry with a primary objective of improving the understanding of students through experiments.
------------------------	--

Topic discussed	Different experiments based on Heat Transfer Concepts
------------------------	---

Outcome of the event	<ul style="list-style-type: none"> i. Improvement in understanding of theory concepts. ii. Improvement in students' ability to be more observant and inquisitive.
-----------------------------	---

Assessment	<ul style="list-style-type: none"> i. Type of Assessment: Experiential learning ii. Task Assigned: 			
	Grp. No.	ID No.	Student Name	
	1	20201PET0001	Sohael K S	Computer controlled heat transfer through composite wall
		20201PET0004	Rachan Balakrishna Shetty	
		20201PET0006	Praveen B	
		20201PET0008	Nallabhotula Dushyanth	
	2	20201PET0033	Shekar	Parallel/ Counter flow heat transfer
		20201PET0010	Pradeep Kumar Rathod	
		20201PET0011	A M Rizwan	
		20201PET0012	Mohammed Shazan	
20201PET0014		Zaheed Ahmed		
3	20201PET0015	Mujtba Aamir Ahmed	Emissivity Measurement	
	20201PET0031	Bandla Hareesh		


 REGISTRAR


	20201PET0018	Nuthan M S	
	20201PET0019	Pranav A	
	20201PET0021	R Janardhan Reddy	
4	20201PET0022	Mohammed Shadim D K	Heat transfer in forced convection
	20201PET0023	Prathivraj S	
	20201PET0026	Ajmal Akbar Babu	
	20201PET0030	Aqib Ahmed Sharieef	
5	20201PET0016	Sidharth Murli	Thermal conductivity of metal rod
	20201PET0009	Kotishwaran V	
	20201PET0034	Kommineni Hemanth	
6	20201PET0029	Pavan Goud	Unsteady heat transfer
	20201PET0017	Bhoomika Satish	
	20191PET0011	Fayaz Pasha	
	20211LPE0001	Muhammed Swalih V P	
	20191PET0009	C S Nishant	
	20201PET9001	Mohammed Shahid	

iii. Sample answers by students:

Aim \Rightarrow 1.1 To find the thermal conductivity of metal rod
 1.2 To Plot the variation of Temperature along the length of the metal rod

Outcome \Rightarrow On Successful Completion of this Experiment, the student shall be able to apply the principles of heat transfer by Conduction in Solid objects

Procedure \Rightarrow All the valves should be closed V-V.
 \rightarrow Continuous water supply to the inlet of water chamber.
 \rightarrow Press the main OFF/low switch given on the panel and OFF
 \rightarrow Electric supply to the setup must be connected
 \rightarrow Switch ON the main ON/OFF Switch
 \rightarrow Switch ON the heater ON/OFF Switch
 \rightarrow Set the heater input by PID, temperature in the range 40-100°C
 \rightarrow Valve V₁ should be opened & flow of water should be started
 \rightarrow Start the watch & collect the water in measuring cylinder.
 \rightarrow Time & volume of water should be noted
 \rightarrow Note down the readings of temperature sensor at every 10 minutes.

Achiever

OBSERVATION

TABLE

S.No	F (m)	t (sec)	V (cc)	T ₁ (°C)	T ₂ (°C)	T ₃ (°C)	T ₄ (°C)	T ₅ (°C)	T ₆ (°C)	T ₇ (°C)
1	260	60	75	67.4	59.7	52.6	46.0	39.2	32.4	24.9
2	260	60	80	72.6	65.6	59.1	52.7	46.4	39.4	28.1
3	260	60	85	78.4	69.2	62.3	54.2	49.2	42.4	28.5

CALCULATION

$M = \frac{260 \times 1000 \times 10^{-6}}{60} = 4.33 \times 10^{-3}$

$Q_1 = 4.33 \times 10^{-3} \times 4186 (2.4) = 43.5 \text{ W}$
 $Q_2 = 4.33 \times 10^{-3} \times 4186 (2.7) = 48.73 \text{ W}$
 $Q_3 = 4.33 \times 10^{-3} \times 4186 (3.0) = 56.18 \text{ W}$

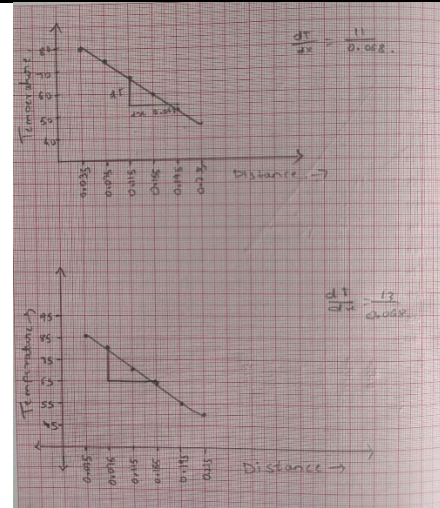
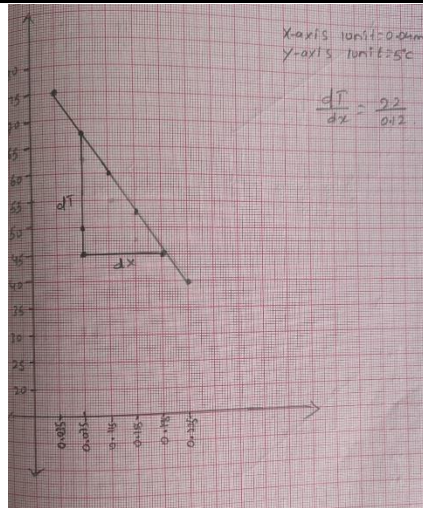
$A = 0.0009 \text{ m}^2$

$K_1 = \frac{43.5}{4.1 \times 10^{-4} \times \frac{22}{0.12}} = 484.23 \text{ W/m}^{\circ}\text{C}$

$K_2 = \frac{48.93}{4.1 \times 10^{-4} \times \frac{11}{0.08}} = 617.29 \text{ W/m}^{\circ}\text{C}$

$K_3 = \frac{56.18}{4.1 \times 10^{-4} \times \frac{17}{0.08}} = 599.72$

Registrar
 PRESIDENCY UNIVERSITY
 BANGALORE



Calculation Table

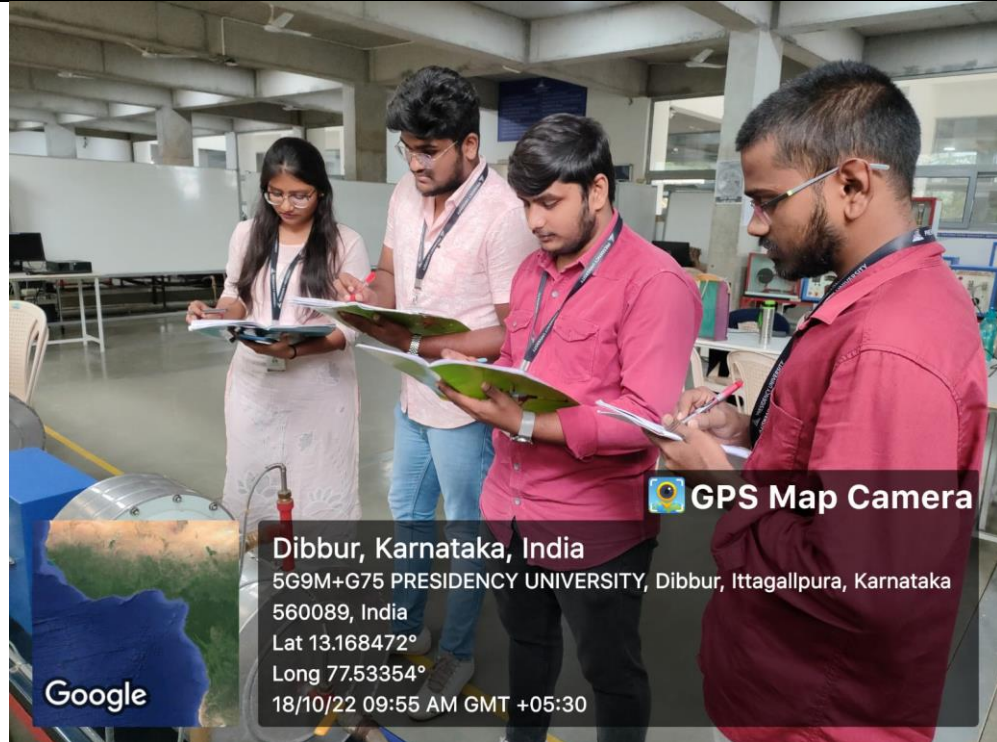
S.No	Q (W)	k (W/m°C)
1	45.5	484.23
2	48.93	617.29
3	56.18	599.72

→ When experiment is over switch off the mains.
 → Water supply should be stopped by closing the valve V.
 → Switch OFF electric supply to the setup
 → Drain water by open the valve W.

→ Result → It is observed that the thermal conductivity of metal rod is ?

Jame
 REGISTRAR
 PRESIDENCY UNIVERSITY
 REGISTRAR
 BANGALORE

Event photo



Attendance sheet

Sl. No.	ID No.	Student Name	Attendance
1	20201PET0001	Sohael K S	P
2	20201PET0004	Rachan Balakrishna Shetty	P
3	20201PET0006	Praveen B	P
4	20201PET0008	Nallabhotula Dushyanth	P
5	20201PET0009	Kotishwaran V	P
6	20201PET0010	Pradeep Kumar Rathod	P
7	20201PET0011	A M Rizwan	P
8	20201PET0012	Mohammed Shazan	P
9	20201PET0014	Zaheed Ahmed	P
10	20201PET0015	Mujtba Aamir Ahmed	P
11	20201PET0016	Siddharth Murali	P

REGISTRAR

REGISTRAR

PRESIDENCY UNIVERSITY
BANGALORE

	12	20201PET0017	Bhoomika Satish	P
	13	20201PET0018	Nuthan M S	P
	14	20201PET0019	Pranav A	P
	15	20201PET0021	R Janardhan Reddy	P
	16	20201PET0022	Mohammed Shadim D K	P
	17	20201PET0023	Prathivraj S	P
	18	20201PET0026	Ajmal Akbar Babu	P
	19	20201PET0029	Pavan Goud	P
	20	20201PET0030	Aqib Ahmed Sharieef	P
	21	20201PET0031	Bandla Hareesh	P
	22	20201PET0033	Shekar	P
	23	20201PET0034	Kommineni Hemanth	P
	24	20201PET9001	Mohammed Shahid	P
	25	20191PET0009	C S Nishant	P
	26	20191PET0011	Fayaz Pasha	P
	27	20211LPE0001	Muhammed Swalih V P	P





Signature of Instructor In charge

Dr. Abhinav Kumar
Assistant Professor
Department of Petroleum Engineering



Dr. Suman Paul
Professor and Head
Department of Petroleum Engineering

REGISTRAR
Presidency University
BANGALORE

DEPARTMENT OF PETROLEUM ENGINEERING

Ref. No.: PU/SOE/PET/SD/PIC/2022-23/CIR/01

Date: 01/05/2023

Circular

Academic Year: 2022 – 2023

Course: PET2005

Semester: 4th

Dear students of 4PET-1,

It is to inform you all that a “Experiential Learning” activity for the course **PET2005 Fundamental of Instrumentation and Control Engineering** is schedule on 05/05/2023, from 9:00 AM to 10:50AM (OFFLINE MODE).

It is mandatory for all the student to remain present during the activity session and take part in numerical solving.



Dr. Sourav Mukherjee

Instructor In-charge





REGISTRAR Registrar
PRESIDENCY UNIVERSITY
BANGALORE

ANNEXURE-I

Sl. No.	ID No.	Student Name
1	20211PET0001	MOHAMED SAADULLAH S
2	20211PET0002	ROSHAN T
3	20211PET0003	SYED LUQMAN J
4	20211PET0004	BELIM MOH SAAD MOHAMMEDBHAI
5	20211PET0005	MOHAMMAD SUHAIL
6	20211PET0008	VANKALA JAI SPHOORTHY
7	20211PET0009	AFEEZ
8	20211PET0010	HITHESH T
9	20211PET0011	GANUGA ROSHAN
10	20211PET0012	MOHAMED NAIF NIHAD ALI
11	20211PET0013	DEEPAK JADHAV
12	20211PET0014	DARSHAN D P
13	20211PET0015	MOHAMMAD YASIR BYAKOD
14	20211PET0016	ASMA THASNIM
15	20211PET0017	IBRAHIM NAWAZ M
16	20211PET0018	SANDEEP IYAGAR
17	20211PET0019	KIRAN EKIRAN
18	20211PET0020	YASHWANTH GOWDA M
19	20211PET0021	MAYUR P
20	20211PET0022	YASHWANTH S
21	20211PET0023	MOHAMMED SHABAZ KHALANDER D
22	20211PET0024	BOLLAMA REDDY HIMAVENKATA MANKANTHA
23	20211PET0025	FAZIL SHAREEF H A
24	20211PET0026	PATEL MOHAMMED ADNAN MOHAMMED GOUS
25	20211PET0027	SYED USMAN
26	20211PET0028	ZOYA FALAK
27	20201PET0027	YARRAMSETTI CHAITANYA SRI
28	20191PET0050	SHAIK GOUSPEER VALI
29	20221LPE0001	SHAIK TABISH RIYAZAHMED

REGISTRAR

REPORT ON EXPERIENTIAL LEARNING


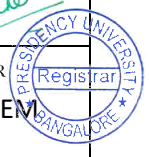
Circular Date and No.	Dt: 01/05/2023 PU/SOE/PET/SD/PIC/2022-23/CIR/01	Date of Event	05.05.2023
Type of learning	Skill development	Event Type:	Experiential Learning
Mode of Event:	Offline	No. of Participant(s):	29
Course Code/ Course Name	PET2005 FUNDAMENTAL OF INSTRUMENTATION AND CONTROL ENGINEERING		
Department	Department of Petroleum Engineering		
Instructor In charge	Dr. Sourav Mukherjee Assistant Professor, Department of Petroleum Engineering		

Event objective	The event was conducted to test the knowledge of students on the topic related to the experiential learning in petroleum industry with a primary objective of improving the understanding of students through experiments.
------------------------	--

Topic discussed	Different experiments based on Fundamental of Instrumentation and Process Control Concepts
------------------------	--

Outcome of the event	<ul style="list-style-type: none"> i. Improvement in understanding of theory concepts. ii. Improvement in students' ability to be more observant and inquisitive.
-----------------------------	---

Assessment	i. Type of Assessment: Experiential learning			
	ii. Task Assigned:			
	Grp. No.	ID No.	Student Name	Topic for Experiment
	1	20211PET0001	MOHAMED SAADULLAH S	CALIBRATION OF THERMOCOUPLE
		20211PET0002	ROSHAN T	
		20211PET0003	SYED LUQMAN J	
		20211PET0004	BELIM MOH SAAD MOHAMMEDBHAI	
		20211PET0005	MOHAMMAD SUHAIL	
		20211PET0008	VANKALA JAI SPHOORTHY	
	2	20211PET0009	AFEEZ	SINGLE TANK SYSTEM
		20211PET0010	HITHESH T	
20211PET0011		GANUGA ROSHAN		


 REGISTRAR


		20211PET0012	MOHAMED NAIF NIHAD ALI	
		20211PET0013	DEEPAK JADHAV	
		20211PET0014	DARSHAN D P	
		20211PET0015	MOHAMMAD YASIR BYAKOD	
	3	NON-INTERACTING SYSTEM	20211PET0016	ASMA THASNIM
			20211PET0017	IBRAHIM NAWAZ M
			20211PET0018	SANDEEP IYAGAR
			20211PET0019	KIRAN EKIRAN
		INTERACTING AND NON INTERACTING SYSTEM	20211PET0020	YASHWANTH GOWDA M
			20211PET0021	MAYUR P
			20211PET0022	YASHWANTH S
			20211PET0023	MOHAMMED SHABAZ KHALANDER D
	4	MANOMETER	20211PET0024	BOLLAMA REDDY HIMA VENKATA MANKANTHA
			20211PET0018	SANDEEP IYAGAR
			20211PET0019	KIRAN EKIRAN
			20211PET0020	YASHWANTH GOWDA M
			20211PET0021	MAYUR P
	5	FLUID FLOW CONTROLLER	20211PET0022	YASHWANTH S
			20211PET0025	FAZIL SHAREEF H A
			20211PET0026	PATEL MOHAMMED ADNAN MOHAMMED GOUS
			20211PET0027	SYED USMAN
			20211PET0028	ZOYA FALAK
			20201PET0027	YARRAMSETTI CHAITANYA SRI
			20191PET0050	SHAIK GOUSPEER VALI
20221LPE0001	SHAIK TABISH RIYAZAHMED			

REGISTRAR Registrar
PRESIDENCY UNIVERSITY
BANGALORE

Event photo



Attendance sheet

Sl. No.	ID No.	Student Name	Attendance
1	20211PET0001	MOHAMED SAADULLAH S	P
2	20211PET0002	ROSHAN T	P
3	20211PET0003	SYED LUQMAN J	P
4	20211PET0004	BELIM MOH SAAD MOHAMMEDBHAI	P
5	20211PET0005	MOHAMMAD SUHAIL	P
6	20211PET0008	VANKALA JAI SPHOORTHY	P
7	20211PET0009	AFEEZ	P
8	20211PET0010	HITHESH T	P
9	20211PET0011	GANUGA ROSHAN	P

REGISTRAR

10	20211PET0012	MOHAMED NAIF NIHAD ALI	P
11	20211PET0013	DEEPAK JADHAV	P
12	20211PET0014	DARSHAN D P	P
13	20211PET0015	MOHAMMAD YASIR BYAKOD	A
14	20211PET0016	ASMA THASNIM	P
15	20211PET0017	IBRAHIM NAWAZ M	P
16	20211PET0018	SANDEEP IYAGAR	P
17	20211PET0019	KIRAN EKIRAN	P
18	20211PET0020	YASHWANTH GOWDA M	P
19	20211PET0021	MAYUR P	P
20	20211PET0022	YASHWANTH S	P
21	20211PET0023	MOHAMMED SHABAZ KHALANDER D	P
22	20211PET0024	BOLLAMA REDDY HIMAVENKATA MANKANTHA	P
23	20211PET0025	FAZIL SHAREEF H A	P
24	20211PET0026	PATEL MOHAMMED ADNAN MOHAMMED GOUS	P
25	20211PET0027	SYED USMAN	P
26	20211PET0028	ZOYA FALAK	P
27	20201PET0027	YARRAMSETTI CHAITANYA SRI	P
28	20191PET0050	SHAIK GOUSPEER VALI	P
29	20221LPE0001	SHAIK TABISH RIYAZAHMED	P



Signature of Instructor In charge

Dr. Sourav Mukherjee
Assistant Professor
Department of Petroleum Engineering



Dr. Suman Paul
Professor and Head
Department of Petroleum Engineering



DEPARTMENT OF PETROLEUM ENGINEERING

Ref. No.: PU/SOE/PET/SD/IOGRS/2022-23/CIR/01

Date: 18/04/2023

Circular

Academic Year : 2022 – 2023

Course: PET2010

Semester: 6th

Dear students of 6PET-1,

It is to inform you all that a “Experiential Learning” activity for the course **PET 2010 Introduction to Oil and Gas Reservoir Simulation** is schedule on 02/05/2023, from 1:20 PM to 2:10 PM (OFFLINE MODE).

It is mandatory for all the student to remain present during the activity session and take part in the activity

Barasha Deka.

Dr. Barasha Deka

Instructor In-charge

Jane
REGISTRAR Registrar
PRESIDENCY UNIVERSITY
BANGALORE

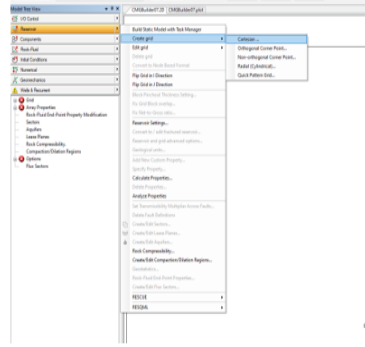
REPORT ON EXPERIENTIAL LEARNING

Circular Date and No.	Dtd: 18/04/2023 PU/SOE/PET/SD/IOGRS/2022-23/CIR/01	Date of Event	02.05.2023
Type of learning	Skill development	Event Type:	Experiential Learning
Mode of Event:	Offline	No. of Participant(s):	27
Course Code/ Course Name	PET2010 Introduction to Oil and Gas Reservoir Simulation		
Department	Department of Petroleum Engineering		
Instructor In charge	Dr. Barasha Deka Assistant Professor, Department of Petroleum Engineering		
Event objective	The event was conducted to test the knowledge of students on the topic related to the experiential learning in petroleum industry with a primary objective of improving the understanding of students through experiments.		
Topic discussed	CMG Simulator		
Outcome of the event	<ul style="list-style-type: none"> i. Improvement in understanding of theory concepts. ii. Improvement in students' ability to be more observant and inquisitive. 		
Assessment	<ul style="list-style-type: none"> i. Type of Assessment: Experiential learning ii. Task Assigned: Geometric Modelling - Input and Modify model dimensions and geometry as per given conditions iii. Sample answers by students: 		

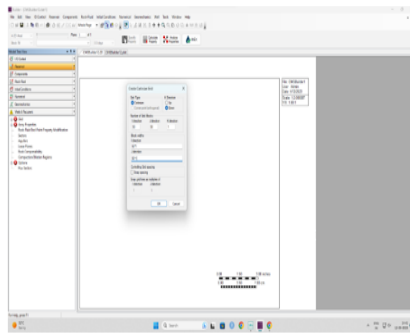

 REGISTRAR


Exp.- Geometric Modelling

Input and Modify model dimensions and geometry as per given conditions

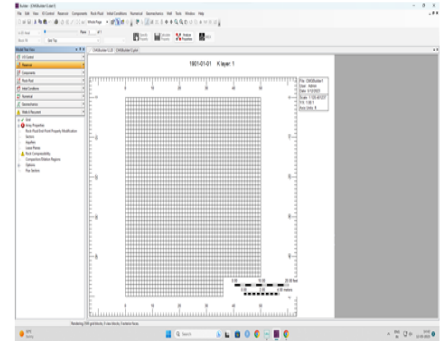


Under Reservoir > Create Grid > Cartesian.



We input the values accordingly as shown in the figure above,

The below Cartesian grid is created



EXP.03 – FLUID PROPERTIES MODELLING

FLUID PROPERTIES THAT CAN BE QUANTIFIED IN A GIVEN SIMULATOR

Select components > Black oil model

EXP2 CMG INTRODUCTION

EXP2 GEOMETRIC MODELING

EXPERIMENT 4 FLUID PROPERTIES MODELING

#	p	Rs	Bs	Zg	Wc	Wcg	Wcr
1	14.69	1.5081	1.0242	0.90270	0.00000	0.00000	0.00000
2	281.70	16.887	1.0400	0.95846	0.00000	0.00000	0.00000
3	442.57	32.778	1.0469	0.97677	0.00000	0.00000	0.00000
4	721.77	67.742	1.0546	0.99196	0.00000	0.00000	0.00000
5	1075.77	121.627	1.0620	0.99878	0.00000	0.00000	0.00000
6	1329.8	163.674	1.0689	0.99948	0.00000	0.00000	0.00000
7	1448.82	178.485	1.0705	0.99962	0.00000	0.00000	0.00000
8	1607.84	228.475	1.0819	0.99871	0.00000	0.00000	0.00000
9	1626.36	162	1.0854	0.99889	0.00000	0.00000	0.00000
10	2262.03	188.185	1.1121	0.97803	0.00000	0.00000	0.00000

EXP 3 FLUID PROPERTIES MODELING



#	Description	Options	Value
1	Reservoir temperature		140.7
2	Generate data up to max. pressure of		4500 psi
3	Bubble point pressure calculation	Generate from GOR value	1.00E+03 MM
4	Oil density at STC (14.7 psia, 60 F)	Block table of gravity API	0.9
5	Gas density at STC (14.7 psia, 60 F)	Gas gravity (W=1)	0.8
6	Reference pressure for water properties		14.696 psi
7	Pressure dependence of water viscosity		
8	Water salinity (ppm)		10000

EXPERIMENT 5 DEFINE POROSITY AND PERMEABILITY

Property	Porosity	Permeability (D)	Permeability (mD)	Permeability (μmD)
UNITS		md	md	μmD
PROPACES	x	x	x	x
PROPACES	x	x	x	x
Filter out	0	0	0	0

Event photo

		Sl. No.	ID No.	Student Name	Attendance
		Attendance sheet	1	20201PET0001	Sohael K S
2	20201PET0004		Rachan Balakrishna Shetty	P	
3	20201PET0006		Praveen B	P	
4	20201PET0008		Nallabhotula Dushyanth	P	
5	20201PET0009		Kotishwaran V	P	
6	20201PET0010		Pradeep Kumar Rathod	P	
7	20201PET0011		A M Rizwan	P	
8	20201PET0012		Mohammed Shazan	P	
9	20201PET0014		Zaheed Ahmed	P	
10	20201PET0015		Mujtba Aamir Ahmed	P	
11	20201PET0016		Siddharth Murali	P	
12	20201PET0017		Bhoomika Satish	P	
13	20201PET0018		Nuthan M S	P	
14	20201PET0019		Pranav A	P	
15	20201PET0021		R Janardhan Reddy	P	
16	20201PET0022		Mohammed Shadim D K	P	
17	20201PET0023		Prathivraj S	P	
18	20201PET0026		Ajmal Akbar Babu	P	
19	20201PET0029		Pavan Goud	P	
20	20201PET0030		Aqib Ahmed Sharieef	P	
21	20201PET0031		Bandla Hareesh	P	
22	20201PET0033		Shekar	P	
23	20201PET0034		Kommineni Hemanth	P	


 REGISTRAR




Department of Petroleum Engineering

Presidency University, Bengaluru

Itgalpur, Rajanakunte, Yelahanka, Bengaluru – 560064

		24	20201PET9001	Mohammed Shahid	P
		25	20191PET0009	C S Nishant	P
		26	20191PET0011	Fayaz Pasha	P
		27	20211LPE0001	Muhammed Swalih V P	P

Barasha Deka.

Signature of Instructor In charge

Dr. Barasha Deka
Assistant Professor
Department of Petroleum Engineering

Dr. Suman Paul
Professor and Head
Department of Petroleum Engineering

Sume
REGISTRAR

Registrar
BANGALORE

DEPARTMENT OF PETROLEUM ENGINEERING

Ref. No.: PU/SOE/PET/SD/RFM/2022-23/CIR/01

Date: 15/05/2023

Circular

Academic Year: 2022 – 2023

Course: PET2012


Semester: 4th

Dear students of 4PET-1,


It is to inform you all that a “experiential learning” activity for the course **PET2012 Reservoir Fluid Mechanics** is schedule on 25/05/2023, from 9:00 PM to 10:40 AM (OFFLINE MODE). It is mandatory for all the student to remain present during the activity session and take part in numerical solving.



Dr. Abhinav Kumar
Instructor In-charge





REGISTRAR



REGISTRAR
PRESIDENCY UNIVERSITY
BANGALORE

REPORT ON EXPERIENTIAL LEARNING

Circular Date and No.	Dtd: 15/05/2023 PU/SOE/PET/SD/RFM/2022-23/CIR/01	Date of Event	25.05.2023	
Type of learning	Skill development	Event Type:	Experiential Learning	
Mode of Event:	Offline	No. of Participant(s):	29	
Course Code/ Course Name	PET2012 Reservoir Fluid Mechanics			
Department	Department of Petroleum Engineering			
Instructor In charge	Dr. Abhinav Kumar Assistant Professor, Department of Petroleum Engineering			
Event objective	The event was conducted to test the knowledge of students on the topic related to the experiential learning in petroleum industry with a primary objective of improving the understanding of students through experiments.			
Topic discussed	Different experiments based on Reservoir Fluid Mechanics Concepts			
Outcome of the event	<ul style="list-style-type: none"> i. Improvement in understanding of theory concepts. ii. Improvement in students' ability to be more observant and inquisitive. 			
Assessment	<ul style="list-style-type: none"> i. Type of Assessment: Experiential learning ii. Task Assigned: 			
	Grp. No.	ID No.	Student Name	
	1	20211PET0001	Mohamed Saadullah S	Minor Losses in Pipe
		20211PET0003	Syed Luqman J	
		20211PET0004	Belim Moh Saad Mohammedbhai	
		20211PET0005	Mohammad Suhail	
	2	20211PET0008	Vankala Jai Sphoorathi	Major Losses in Pipe
		20211PET0009	Afeez	
		20211PET0010	Hithesh T	
		20211PET0011	Ganuga Roshan	
20211PET0012		Mohamed Naif Nihad Ali		


 REGISTRAR


	3	20211PET0013	Deepak Jadhav	Reynold's Number
		20211PET0014	Darshan D P	
		20211PET0015	Mohammad Yasir Byakod	
		20221LPE0001	Shaik Tabish Riyazahmed	
		20211PET0017	Ibrahim Nawaz M	
	4	20211PET0018	Sandeep Iyagar	Discharge of Fluid
		20211PET0019	Kiran Ekiran	
		20191PET0050	Shaik Gouspeer Vali	
		20211PET0021	Mayur P	
		20211PET0022	Yashwanth S	
	5	20211PET0023	Mohammed Shabaz Khalander D	Impact of Jet
		20211PET0024	Bollama Reddy Himavenkata Mankantha	
		20211PET0025	Fazil Shareef H A	
		20211PET0026	Patel Mohammed Adnan Mohammed Gous	
		20211PET0027	Syed Usman	
	6	20211PET0028	Zoya Falak	Bernoulli's Theorem
		20201PET0027	Yarramsetti Chaitanya Sri	
		20211PET0020	Yashwanth Gowda M	
		20211PET0016	Asma Thasnim	
		20211PET0002	Roshan T	
iii. Sample answers by students:				

Bernoulli Theorem Apparatus

OBJECTIVE: To verify Bernoulli equation experimentally

AIM:

- To calculate the total energy at different points.
- To plot the graph between total energy vs distance.

INTRODUCTION:

Bernoulli theorem states that when there is a continuous connection between particles of a flowing mass of liquid, the total energy at any section of flow will remain the same provided there is no reduction or addition of energy at any point.

THEORY:

This is the energy equation and is based on the law of conservation of energy. This equation states that at two sections of flow field the total energy remains the same provided that there is no loss or gain of energy between the two sections. This equation is valid only for steady flow. This equation is expressed as:

$$E = \frac{P_1}{\rho g} + \frac{V_1^2}{2g} + Z_1 = \frac{P_2}{\rho g} + \frac{V_2^2}{2g} + Z_2$$

DESCRIPTION:

The present experimental setup for Bernoulli theorem is self-contained & circulating well. The set-up comprises the sum tank, overhead tank, centrifugal pump for water circulation, control valve and bypass valve. It is provided to regulate the flow of water in constant head tank. A test section made of perspex of varying cross-section is provided, which is having converging and diverging section. Piezometer tubes are fitted on this test section at specified points. The inlet of the conduit is connected to overhead tank. Discharge through test section can be measured with the help of measuring tank and stop watch.

INSTRUMENTS REQUIRED:

- Electricity supply: single phase, 230V AC, 50Hz, 5A supply contained socket with earth connection. Bulk voltage should be less than 5 Volts.
- Water supply (Chilled H₂O)
- Flow diam required
- Flow area required: 1.5cm x 0.1cm

EXPERIMENTAL PROCEDURE:

STARTING PROCEDURE:

- Ensure it was ensured that all on/off switches given on the panel area are at off position.
- All the values V_1 to V_6 .

OBSERVATIONS:

S. No	R ₁ (cm)	R ₂ (cm)	R ₃ (cm)	h ₁ (cm)	h ₂ (cm)	h ₃ (cm)	h ₄ (cm)	h ₅ (cm)	h ₆ (cm)
1	20	15	7.8	28	26	21.5	76	15.8	2.1
2	20	15	8.5	27	26	19.2	3	14.5	15
3	20	15	7.4	24	21	13.4	0	0	0.5

CALCULATIONS:

Reading 1:
 $R = \frac{R_1 - R_2}{100} = \frac{20 - 15}{100} = 0.05 \text{ m}$

$$Q = \frac{\pi R^2}{L} = \frac{0.077 \times 0.05}{0.81} = 3.924 \times 10^{-4} \text{ m}^3/\text{s}$$

$V_1 = \frac{Q}{A_1} = \frac{3.924 \times 10^{-4}}{7.065 \times 10^{-4}} = 0.555 \text{ m/s}$

$V_2 = \frac{Q}{A_2} = \frac{3.924 \times 10^{-4}}{4.521 \times 10^{-4}} = 0.8679 \text{ m/s}$

$V_3 = \frac{Q}{A_3} = \frac{3.924 \times 10^{-4}}{3.140 \times 10^{-4}} = 1.2496 \text{ m/s}$

$V_4 = \frac{Q}{A_4} = \frac{3.924 \times 10^{-4}}{2.009 \times 10^{-4}} = 1.9532 \text{ m/s}$

$V_5 = \frac{Q}{A_5} = \frac{3.924 \times 10^{-4}}{3.140 \times 10^{-4}} = 1.2496 \text{ m/s}$

$V_6 = \frac{Q}{A_6} = \frac{3.924 \times 10^{-4}}{4.521 \times 10^{-4}} = 0.8679 \text{ m/s}$

$V_7 = \frac{Q}{A_7} = \frac{3.924 \times 10^{-4}}{7.065 \times 10^{-4}} = 0.555 \text{ m/s}$

$\frac{P_1}{\rho g} = \frac{h_1}{100} = \frac{28}{100} = 0.28 \text{ m}$	$\frac{P_2}{\rho g} = \frac{h_2}{100} = \frac{26}{100} = 0.26 \text{ m}$
$\frac{P_3}{\rho g} = \frac{h_3}{100} = \frac{21.5}{100} = 0.215 \text{ m}$	$\frac{P_4}{\rho g} = \frac{h_4}{100} = \frac{76}{100} = 0.76 \text{ m}$
$\frac{P_5}{\rho g} = \frac{h_5}{100} = \frac{15.8}{100} = 0.158 \text{ m}$	$\frac{P_6}{\rho g} = \frac{h_6}{100} = \frac{2.1}{100} = 0.021 \text{ m}$
$\frac{P_7}{\rho g} = \frac{h_7}{100} = \frac{2.1}{100} = 0.021 \text{ m}$	

$E_1 = \frac{P_1}{\rho g} + \frac{V_1^2}{2g} = 0.28 + \frac{0.555^2}{2(9.81)} = 0.28 + 0.0158 = 0.2958 \text{ m}$

$E_2 = \frac{P_2}{\rho g} + \frac{V_2^2}{2g} = 0.26 + \frac{0.8679^2}{2(9.81)} = 0.2958 \text{ m}$

$E_3 = \frac{P_3}{\rho g} + \frac{V_3^2}{2g} = 0.215 + \frac{0.0797}{2g} = 0.294 \text{ m}$

$E_4 = \frac{P_4}{\rho g} + \frac{V_4^2}{2g} = 0.76 + \frac{0.1344}{2g} = 0.294 \text{ m}$

$E_5 = \frac{P_5}{\rho g} + \frac{V_5^2}{2g} = 0.158 + \frac{0.0797}{2g} = 0.2483 \text{ m}$

$E_6 = \frac{P_6}{\rho g} + \frac{V_6^2}{2g} = 0.021 + \frac{0.0158}{2g} = 0.046 \text{ m}$

$E_7 = \frac{P_7}{\rho g} + \frac{V_7^2}{2g} = 0.021 + \frac{0.0158}{2g} = 0.046 \text{ m}$

Reading 2:
 $Q = \frac{\pi R^2}{L} = \frac{0.077 \times 0.05}{0.81} = 4.497 \times 10^{-4} \text{ m}^3/\text{s}$

$V_1 = \frac{Q}{A_1} = \frac{4.497 \times 10^{-4}}{7.065 \times 10^{-4}} = 0.6365 \text{ m/s}$

$V_2 = \frac{Q}{A_2} = \frac{4.497 \times 10^{-4}}{4.521 \times 10^{-4}} = 0.9946 \text{ m/s}$

$V_3 = \frac{Q}{A_3} = \frac{4.497 \times 10^{-4}}{3.140 \times 10^{-4}} = 1.4321 \text{ m/s}$

$V_4 = \frac{Q}{A_4} = \frac{4.497 \times 10^{-4}}{2.009 \times 10^{-4}} = 2.2384 \text{ m/s}$

	<p>Q1) The pump tank was filled with water.</p> <p>Q2) The bypass valve V_2 given on the control supply outlet side of the tank was opened.</p> <p>Q3) The main power supply and the pump were switched on.</p> <p>Q4) Partially closed bypass valve V_2 to allow water to flow in overhead tank.</p> <p>Q5) We noticed small overflows occur from overhead tank.</p> <p>Q6) Regulated flow of water through test section with the help of control valve V_1 provided at the end of end of test section.</p> <p>Q7) It was assumed that the overflows will occur if not partially closed the bypass valve V_2 to do so.</p> <p>Q8) The pressure head by piezometer tubes was measured.</p> <p>Q9) The flow rate of water using measuring tank and stop watch was measured.</p> <p>Q10) The slope (HFT) to (PS) were reported for different flow rates of water.</p> <p>➤ Closing procedure:</p> <p>Q1) The pump was switched off after the experiment was over.</p> <p>Q2) The power supply to the panel was switched off.</p> <p>Q3) The water from all tanks with the help of glass drains valves of V_3, V_4 & V_5 was drained.</p> <p>➤ Precautions and Recommendations:</p> <p>Q1) Never run the apparatus if power supply is less than 200 volts and above 330 volts.</p>	$V_1 = \frac{Q}{A} = \frac{4.197 \times 10^{-4}}{3.14 \times 10^{-4}} = 1.335 \text{ m/s}$ $V_2 = \frac{Q}{A} = \frac{4.197 \times 10^{-4}}{6.28 \times 10^{-4}} = 0.667 \text{ m/s}$ $V_3 = \frac{Q}{A} = \frac{4.197 \times 10^{-4}}{3.26 \times 10^{-4}} = 1.284 \text{ m/s}$ $\frac{P_1}{\rho} + \frac{h_1}{100} = \frac{24}{100} = 0.24 \text{ m}$ $\frac{P_2}{\rho} + \frac{h_2}{100} = \frac{13.4}{100} = 0.134 \text{ m}$ $\frac{P_3}{\rho} + \frac{h_3}{100} = \frac{0}{100} = 0$ $\frac{P_4}{\rho} + \frac{h_4}{100} = \frac{0}{100} = 0$ $\frac{P_5}{\rho} + \frac{h_5}{100} = \frac{0}{100} = 0$ $E_1 = \frac{P_1}{\rho} + \frac{V_1^2}{2g} = 0.24 \text{ m}$ $E_2 = \frac{P_2}{\rho} + \frac{V_2^2}{2g} = 0.221 \text{ m}$ $E_3 = \frac{P_3}{\rho} + \frac{V_3^2}{2g} = 0.258 \text{ m}$ $E_4 = \frac{P_4}{\rho} + \frac{V_4^2}{2g} = 0.245 \text{ m}$ $E_5 = \frac{P_5}{\rho} + \frac{V_5^2}{2g} = 0.237 \text{ m}$ <p>➤ Forming a line</p> $Q = 0.008 = \frac{0.075 \times 0.05}{7.64} = 4.93 \times 10^{-4} \text{ m}^3/\text{s}$ $V_1 = \frac{Q}{A} = \frac{4.93 \times 10^{-4}}{3.14 \times 10^{-4}} = 1.57 \text{ m/s}$ $V_2 = \frac{Q}{A} = \frac{4.93 \times 10^{-4}}{6.28 \times 10^{-4}} = 0.785 \text{ m/s}$ $V_3 = \frac{Q}{A} = \frac{4.93 \times 10^{-4}}{3.14 \times 10^{-4}} = 1.57 \text{ m/s}$ $V_4 = \frac{Q}{A} = \frac{4.93 \times 10^{-4}}{6.28 \times 10^{-4}} = 0.785 \text{ m/s}$																																																
	<p>Q1) To avoid clogging of moving parts, run pump without over in a fortnight.</p> <p>Q2) Always use clean water.</p> <p>Q3) Always clean apparatus from dust.</p> <p>Q4) Do not perform experiment without maintaining water in overhead tank.</p> <p>Q5) Drain the apparatus completely after experimentation.</p> <p>➤ Troubleshooting:</p> <p>Q1) If the pump gets jammed, open the back cover of pump and rotate the shaft manually.</p> <p>Q2) If pump gets heated up, switch off the pump for 20 minutes.</p> <p>➤ RESULT:</p> <p>Total energy at different points.</p> <p>Result 1:</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Point</th> <th>S_1</th> <th>S_2</th> <th>S_3</th> <th>S_4</th> <th>S_5</th> <th>S_6</th> <th>S_7</th> </tr> </thead> <tbody> <tr> <td>Distance</td> <td>0.0000</td> <td>0.0180</td> <td>0.0360</td> <td>0.0540</td> <td>0.0720</td> <td>0.0900</td> <td>0.1080</td> </tr> <tr> <td>Energy @ (Pa, m)</td> <td>0.245</td> <td>0.238</td> <td>0.239</td> <td>0.240</td> <td>0.241</td> <td>0.242</td> <td>0.243</td> </tr> </tbody> </table> <p>Result 2:</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Point</th> <th>S_1</th> <th>S_2</th> <th>S_3</th> <th>S_4</th> <th>S_5</th> <th>S_6</th> <th>S_7</th> </tr> </thead> <tbody> <tr> <td>Distance</td> <td>0.0000</td> <td>0.0180</td> <td>0.0360</td> <td>0.0540</td> <td>0.0720</td> <td>0.0900</td> <td>0.1080</td> </tr> <tr> <td>Energy @ (Pa, m)</td> <td>0.220</td> <td>0.237</td> <td>0.238</td> <td>0.239</td> <td>0.240</td> <td>0.241</td> <td>0.242</td> </tr> </tbody> </table> <p style="text-align: right; font-size: small;">Teacher's Signature</p>	Point	S_1	S_2	S_3	S_4	S_5	S_6	S_7	Distance	0.0000	0.0180	0.0360	0.0540	0.0720	0.0900	0.1080	Energy @ (Pa, m)	0.245	0.238	0.239	0.240	0.241	0.242	0.243	Point	S_1	S_2	S_3	S_4	S_5	S_6	S_7	Distance	0.0000	0.0180	0.0360	0.0540	0.0720	0.0900	0.1080	Energy @ (Pa, m)	0.220	0.237	0.238	0.239	0.240	0.241	0.242	$V_1 = \frac{Q}{A} = \frac{5.153 \times 10^{-4}}{3.14 \times 10^{-4}} = 1.641 \text{ m/s}$ $V_2 = \frac{Q}{A} = \frac{5.153 \times 10^{-4}}{6.28 \times 10^{-4}} = 0.820 \text{ m/s}$ $V_3 = \frac{Q}{A} = \frac{5.153 \times 10^{-4}}{3.14 \times 10^{-4}} = 1.641 \text{ m/s}$ $V_4 = \frac{Q}{A} = \frac{5.153 \times 10^{-4}}{6.28 \times 10^{-4}} = 0.820 \text{ m/s}$ $\frac{P_1}{\rho} + \frac{h_1}{100} = \frac{24}{100} = 0.24 \text{ m}$ $\frac{P_2}{\rho} + \frac{h_2}{100} = \frac{13.4}{100} = 0.134 \text{ m}$ $\frac{P_3}{\rho} + \frac{h_3}{100} = 0$ $\frac{P_4}{\rho} + \frac{h_4}{100} = 0$ $\frac{P_5}{\rho} + \frac{h_5}{100} = \frac{0}{100} = 0$ $E_1 = \frac{P_1}{\rho} + \frac{V_1^2}{2g} = 0.24 \text{ m}$ $E_2 = \frac{P_2}{\rho} + \frac{V_2^2}{2g} = 0.222 \text{ m}$ $E_3 = \frac{P_3}{\rho} + \frac{V_3^2}{2g} = 0.245 \text{ m}$ $E_4 = \frac{P_4}{\rho} + \frac{V_4^2}{2g} = 0.241 \text{ m}$ $E_5 = \frac{P_5}{\rho} + \frac{V_5^2}{2g} = 0.241 \text{ m}$
Point	S_1	S_2	S_3	S_4	S_5	S_6	S_7																																											
Distance	0.0000	0.0180	0.0360	0.0540	0.0720	0.0900	0.1080																																											
Energy @ (Pa, m)	0.245	0.238	0.239	0.240	0.241	0.242	0.243																																											
Point	S_1	S_2	S_3	S_4	S_5	S_6	S_7																																											
Distance	0.0000	0.0180	0.0360	0.0540	0.0720	0.0900	0.1080																																											
Energy @ (Pa, m)	0.220	0.237	0.238	0.239	0.240	0.241	0.242																																											
	<p>Result 3:</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Point</th> <th>S_1</th> <th>S_2</th> <th>S_3</th> <th>S_4</th> <th>S_5</th> <th>S_6</th> <th>S_7</th> </tr> </thead> <tbody> <tr> <td>Distance</td> <td>0.0000</td> <td>0.0180</td> <td>0.0360</td> <td>0.0540</td> <td>0.0720</td> <td>0.0900</td> <td>0.1080</td> </tr> <tr> <td>Energy @ (Pa, m)</td> <td>0.267</td> <td>0.270</td> <td>0.271</td> <td>0.272</td> <td>0.273</td> <td>0.274</td> <td>0.275</td> </tr> </tbody> </table>	Point	S_1	S_2	S_3	S_4	S_5	S_6	S_7	Distance	0.0000	0.0180	0.0360	0.0540	0.0720	0.0900	0.1080	Energy @ (Pa, m)	0.267	0.270	0.271	0.272	0.273	0.274	0.275																									
Point	S_1	S_2	S_3	S_4	S_5	S_6	S_7																																											
Distance	0.0000	0.0180	0.0360	0.0540	0.0720	0.0900	0.1080																																											
Energy @ (Pa, m)	0.267	0.270	0.271	0.272	0.273	0.274	0.275																																											

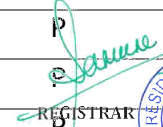

REGISTRAR

Event
photo



Attendance
sheet

Sl. No.	ID No.	Student Name	Attendance
1	20211PET0001	Mohamed Saadullah S	P
2	20211PET0002	Roshan T	P
3	20211PET0003	Syed Luqman J	P
4	20211PET0004	Belim Moh Saad Mohammedbhai	P
5	20211PET0005	Mohammad Suhail	P
6	20211PET0008	Vankala Jai Sphoorthi	P
7	20211PET0009	Afeez	P
8	20211PET0010	Hithesh T	P
9	20211PET0011	Ganuga Roshan	P
10	20211PET0012	Mohamed Naif Nihad Ali	P
11	20211PET0013	Deepak Jadhav	P
12	20211PET0014	Darshan D P	P
13	20211PET0015	Mohammad Yasir Byakod	P
14	20211PET0016	Asma Thasnim	P

REGISTRAR



15	20211PET0017	Ibrahim Nawaz M	P
16	20211PET0018	Sandeep Iyagar	P
17	20211PET0019	Kiran Ekiran	P
18	20211PET0020	Yashwanth Gowda M	P
19	20211PET0021	Mayur P	P
20	20211PET0022	Yashwanth S	P
21	20211PET0023	Mohammed Shabaz Khalander D	P
22	20211PET0024	Bollama Reddy Himavenkata Mankantha	P
23	20211PET0025	Fazil Shareef H A	P
24	20211PET0026	Patel Mohammed Adnan Mohammed Gous	P
25	20211PET0027	Syed Usman	P
26	20211PET0028	Zoya Falak	P
27	20201PET0027	Yarramsetti Chaitanya Sri	P
28	20191PET0050	Shaik Gouspeer Vali	P
29	20221LPE0001	Shaik Tabish Riyazahmed	P




Signature of Instructor In charge

Dr. Abhinav Kumar
Assistant Professor
Department of Petroleum Engineering



Dr. Suman Paul
Professor and Head
Department of Petroleum Engineering



REGISTRAR





Department of Petroleum Engineering

Presidency University, Bengaluru

Itgalpur, Rajanakunte, Yelahanka, Bengaluru – 560064

Event No.:	BJG14	Date:	21-06-2022 (1 Day)
Event Category:	Technical	Event Type:	Project
Mode of Event:	Offline	No. of Participant(s):	19
Event Category:	Experiential Learning		
Event Coordinator:	Mr Bhairab Jyoti Gogoi Assistant Professor, Department of Petroleum Engineering		
Event Title:	Design of Drilling Fluid with organic Waste material as an additive and investigate its properties		
Resource Person:	Mr Bhairab Jyoti Gogoi Assistant Professor, Department of Petroleum Engineering		
Event Objective:	The main objective of this events is to provide an opportunity to student's to apply their knowledge on Well Design and Construction to solve problems. This event will help the student to develop- SKILL and EMPLOYBILITY		
Event Photo(s):			


REGISTRAR






PRESIDENCY UNIVERSITY

Private University Estd. in Karnataka State by Act No. 41 of 2013

40
YEARS
OF
PRIDE




Department of Petroleum Engineering


Project on "Design of Drilling Fluid with organic Waste material as an additive and investigate its properties"

PET 2001 DRILLING FLUID TECHNOLOGY

This PROJECT aims to improving the employability skills of the students.



Resource Person:
Mr. Bhairab Jyoti Gogoi
Assistant Professor
Department of Petroleum Engineering



Who are eligible for Registration?
All 6th Semester Petroleum Engineering student


Mode of Conduction: OFFLINE

Date: 18-04-2022


(e-certificate will be issued after successful completion of the Course)

Faculty Coordinator:
Mr. Bhairab Jyoti Gogoi
(e-mail: bhairabjyoti@presidencyuniversity.in)


Our Sponsors:





SPE
Society of Petroleum Engineers
Presidency University Bengaluru
SPE Student Chapter



AAPG
American Association of Petroleum Geologists
Presidency University Bengaluru Student Chapter





Ittagallura, Karnataka, India
 Engineering Block, PRESIDENCY UNIVERSITY, Ittagallura, Karnataka
 560089, India
 Lat 13.168935°
 Long 77.533824°
 21/06/22 10:42 AM




Ittagallura, Karnataka, India
 Engineering Block, PRESIDENCY UNIVERSITY, Ittagallura, Karnataka
 560089, India
 Lat 13.168935°
 Long 77.533824°
 21/06/22 10:42 AM

Activate
Go to Settings

Jasme
 REGISTRAR
 PRESIDENCY UNIVERSITY
 REGISTRAR
 BANGALORE

List of Participants



PRESIDENCY UNIVERSITY
Private University Estd. in Karnataka State by Act No. 41 of 2013

DEPARTMENT OF PETROLEUM ENGINEERING
ATTENDANCE SHEET

Name of the Event:

Project work on Drilling Fluid Technology

SL No	Name of the student	ID No	Signature'
1	V. Jai Sphoorthi	20211PET0008	<i>V. Jai Sphoorthi</i>
2	Roshan.T	20211PET0002	<i>Roshan.T</i>
3	Naif Mubad Ali	20211PET0010	<i>Naif Mubad Ali</i>
4	Fazil.Shareef	20211PET0025	<i>Fazil.Shareef</i>
5	Hitesh.T	20211PET0010	<i>Hitesh.T</i>
6	YASHWANTH GOWDA.M	20211PET0020	<i>Yashwanth Gowda.M</i>
7	YASHWANTH.S	20211PET0022	<i>Yashwanth.S</i>
8	Syed Usman	20211PET0027	<i>Syed Usman</i>
9	MOHAMMAD YASIR BYAKOD	20211PET0015	<i>Mohammad Yasir Byakod</i>
10	B. Lani Kantha	20211PET0024	<i>B. Lani Kantha</i>
11	Kiran.E	20211PET0019	<i>Kiran.E</i>
12	A.D. Adnan	20211PET0026	<i>A.D. Adnan</i>
13	Arma Tharmin	20211PET0016	<i>Arma Tharmin</i>
14	Md. Sabag Khander .D	20211PET0023	<i>Md. Sabag Khander .D</i>
15	Mohamed Saadullah	20211PET0021	<i>Mohamed Saadullah</i>
16	Moh. Saad Belim	20211PET0004	<i>Moh. Saad Belim</i>

Page 1 of 2

City Office: University House, 8/1, King Street, Richmond Town, Bengaluru 560025

Campus: Presidency University, Itgalpur, Rajanakunte, Yelahanka, Bengaluru 560 089

Phone: +91 80 4925 5533 / 5599 Email ID: info@presidencyuniversity.in

www.presidencyuniversity.in

Just for exchange
Sanne

REGISTRAR





PRESIDENCY UNIVERSITY

Private University Estd. in Karnataka State by Act No. 41 of 2013

17	Ibhalin Nawae	2021PET0017	No2
18	Syad lugman. J	2021PET0003	Syad J
19	Afeez	2021PET0009	Afeez
20			
21			
22			
23			
24			
25			
26			



Mr. Bhairab Jyoti Gogoi
Instructor In charge

Page 2 of 2

City Office: University House, 8/1, King Street, Richmond Town, Bengaluru 560025

Campus: Presidency University, Itgarpur, Rajanakunte, Yelahanka, Bengaluru 560 089

Phone: +91 80 4925 5533 / 5599 Email ID: info@presidencyuniversity.in

www.presidencyuniversity.in

REGISTRAR



Student's report



Department of Petroleum Engineering Presidency University, Bengaluru

Itgalpur, Rajanakunte, Yelahanka, Bengaluru – 560064

Project Report on PET 2001 Drilling Fluid Technology


Section: 2PET-1

Submitted to: Mr. Bhairab Jyoti Gogoi (Instructor In-Charge)

Date of Submission: 21-6-22

Project Title	Banana peel as a Drilling fluid Additive: An experimental investigation of a water based Drilling fluid.
Sample material	Banana peel.
Objective of the project	<ul style="list-style-type: none"> Comparison between Banana peel and Starch as drilling fluid additives Measuring Plastic Viscosity, Apparent viscosity, yield point, lubricity, pH, Filter press of the drilling fluid with additives as banana peel and Starch.
Chemicals Used	<p>S-1 Bentonite, Fly Ash, $CaCO_3$, NaOH, banana peel</p> <p>S-2: Bentonite, Fly Ash, $CaCO_3$, NaOH, Starch</p>
Equipments used	Remi Sherrer, Hand Crank viscometer, pH meter, EP lubricity Tester, LPLT Filter press.
Sample composition	<p>S-1: 800 ml Water + 64 gm Bentonite + 24 gm Fly Ash + 8 gm $CaCO_3$ + 16 gm Banana peel</p> <p>S-2: 800 ml water + 64 gm Bentonite + 24 gm Fly Ash + 8 gm $CaCO_3$ + 16 gm Starch.</p>

Jayme
REGISTRAR





Hand Crank Viscometer readings:

Sample No.	RPM $\phi 600$	RPM $\phi 300$	PV	AV	YP	Gel Strength	
						10 sec	10 min
Sample 1	18	11	7	9	43	20	25
Sample 2	98	50	48	44	2	126	127

Sample : 1

Plastic Viscosity (PV) (in centipoise cP)

$$PV = \mu_p = 600 \text{ RPM Reading} - 300 \text{ RPM Reading}$$

$$= 18 - 11$$

$$\mu_p = 7 \text{ cP}$$

Apparent Viscosity (AV) (in centipoise cP)

$$AV = \mu_a = \frac{600 \text{ RPM Reading}}{2}$$

$$= \frac{18}{2}$$

$$AV = 9 \text{ cP}$$

Observations

Yield Point (Y.P) in $\text{lb}/100 \text{ ft}^2$:

$$YP = 300 \text{ RPM Reading} - PV$$

$$= 50 - 7$$

$$Y.P = 43 \text{ } \cdot \text{lb}/100 \text{ ft}^2$$

Sample - 2:

$$PV = 600 \text{ RPM Reading} - 300 \text{ RPM Reading}$$

$$= 98 - 50$$

$$\mu_p = 48 \text{ cP}$$

$$AV = \mu_a = \frac{600 \text{ RPM Reading}}{2}$$

$$= \frac{98}{2}$$

$$\mu_a = 49 \text{ cP}$$

$$YP = 300 \text{ RPM Reading} - PV$$

$$= 50 - 48$$

$$Y.P = 2 \frac{\text{lb}}{100 \text{ft}^2}$$

pH readings:

Sample No.	pH
sample 1	12.31
sample 2	12.39

LPLT Filter Press Reading:

Sample No.	Amount (Cont)			Mud cake thickness (1/32")
	7.5 min	15 min	30 min	
1	82	132.8	188	38/32 =
2	28	40	60	2/32

EP Lubricity readings:

Sample No.	Torque reading	CF	LC
1	46	0.739	0.339
2	28	1.214	0.339

Correction Factor (CF):

$$\text{Sample 1: } \frac{34}{46} = \frac{34}{46}$$



$$= 0.739$$

$$\text{Sample 2: } \frac{34}{28} = 1.214$$

Lubricity Coefficient (LC):

$$\text{Sample 1: } \frac{4 \times CF}{100} = 0.339$$

$$\text{Sample 2: } \frac{28 \times CF}{100} = 0.339$$

 <p>GAIN MORE KNOWLEDGE REACH GREATER HEIGHTS</p>	<h3>Department of Petroleum Engineering</h3> <h4>Presidency University, Bengaluru</h4> <p>Itgalpur, Rajanakunte, Yelahanka, Bengaluru – 560064</p>
<p>Results and discussion</p>	<ul style="list-style-type: none"> There is a high difference in PV, AV and VP. The plastic viscosity and Apparent viscosity of Sample-2 is very high than that of Sample-1. The Yield Point of Samp-1 is very high than sample-2. Sample-2 has high gel strength than sample-1 PI of both the samples are nearly same Sample-1: 12.31 Sample-2: 12.39 i.e. both sample contributes to make basic muds Amount of Filtrate loss in sample 1 is very high than sample-2 Mud cake thickness of sample 1 was very high than sample-2. Sample-1 mud cake was very thick 38.2". Torque readings ^{of sample-1} was almost double of sample-2. Correction factor of sample-2 was higher than sample-1 but lubricity coefficient were exactly equal.
<p>Name and Signature with date of the students</p>	<p>Mohammed. Shabaz Khalander. D (20211PET0003) <i>M.K.D.</i> 21/06/22</p> <p>Mohamed Saadullah. S (20211PET0001) <i>M.S.</i> 21/06/22</p> <p>Moh. Saad Belim (20211PET0004) <i>S.M. Belim</i> 21/06/22</p> <p>Asma Ibrahim (20211PET0016) <i>Asma Ibrahim</i> 21/06/22</p> <p>Mohammed Adnan Patel (20211PET0026)</p>
<p><i>Patel</i> 21/06/22</p>	
<p>Page 4 of 4</p>	
<p><i>Sanne</i> REGISTRAR</p> 	



Department of Petroleum Engineering

Presidency University, Bengaluru

Itgalpur, Rajanakunte, Yelahanka, Bengaluru – 560064

Project Report on PET 2001 Drilling Fluid Technology

Section: 2PET-1



Submitted to: Mr. Bhairab Jyoti Gogoi (Instructor In-Charge)

Date of Submission: 21-6-22

Project Title	Preparation of a Drilling Fluid using Coconut Husk as a polymer.
Sample material	Coconut Husk.
Objective of the project	<ol style="list-style-type: none"> ① To get the comparative results of drilling fluids made by using starch and coconut husk as ad polymers. ② To reduce the waste (management).
Chemicals Used	Starch, Bentonite, NaOH, CaCO ₃ , Fly Ash
Equipments used	Hand Crank viscometer, EP Lubricity Tester, API LPLT Filter Press.
Sample composition	<ol style="list-style-type: none"> (1) 800ml water + 8g Starch + 40g Bentonite + 8g NaOH + 16g CaCO₃ + 16g Fly Ash (2) 800ml water + 8g Coconut Husk + 40g Bentonite + 8g NaOH + 16g CaCO₃ + 16g Fly Ash.

Page 1 of 4

REGISTRAR



Department of Petroleum Engineering Presidency University, Bengaluru

Itgalpur, Rajanakunte, Yelahanka, Bengaluru – 560064

① Hand Crank Viscometer :

Equipment	RPM		Plastic Viscosity	Apparent Viscosity	Yield Point	Gel Strength (lb/100 sq. ft.)	
	Ø600	Ø300	MP (PV) cP	Ma (AV) cP	Yp (YP) lb/100sq. ft.	10sec	10min
Hand Crank Viscometer	30	18	12	15	6	40	45
	14	8	6	7	2	17	19

Observations

$MP = \phi 600 - \phi 300$,
 at starch a polymer $\rightarrow 30 - 18 = 12 \text{ cP}$
 at Coconut Husk polymer $\rightarrow 14 - 8 = 6 \text{ cP}$


$Ma = \frac{\phi 600}{2}$,
 at starch polymer $\rightarrow 30/2 = 15 \text{ cP}$
 at Coconut Husk polymer $\rightarrow 14/2 = 7 \text{ cP}$

$Y.P. = \phi 300 - MP$,
 at starch polymer $\rightarrow 18 - 12 = 6 \text{ cP}$
 at coconut husk polymer $\rightarrow 14 - 6 = 2 \text{ cP}$

② EP Lubricity Tester :

Sl. No	Torque reading for Drilling Fluid.
1.	50 (Sample 1 - starch)
2.	50 (Sample 2 - Coconut Husk)

Page 2 of 4


 REGISTRAR




Department of Petroleum Engineering

Presidency University, Bengaluru

Itgalpur, Rajanakunte, Yelahanka, Bengaluru – 560064

Correction Factor (CF) = $34 / \text{avg. reading.}$

$$= 34 / 50 = 0.75$$

$$\text{Lubrifiy coefficient (LC)} = \frac{\text{Meter reading} \times (\text{CF})}{100}$$

$$= \frac{50 \times 0.75}{100} = 0.375$$

Lubrifiy coefficient of the given sample is,
0.375.

③ API LPLT Filter Press :

Sl. No	Amount of Filtrate (15 min)	Amount of Filtrate (30 min)	Mud Cake Thickness (1/32")
1.	5	7.6	2/32 (starch)
2.	96	141	19/32 (coconut Husk)

④ PH of both the samples,

PH	Sample 1	Sample 2.
	12.45	12.52.

Jame
REGISTRAR
PRESIDENCY UNIVERSITY
BANGALORE



Department of Petroleum Engineering

Presidency University, Bengaluru

Itgalpur, Rajanakunte, Yelahanka, Bengaluru – 560064

<p>Results and discussion</p>	<p>① For the fluid sample with starch as polymer, PV, AV, YP and Gel strength is respectively 12cP, 15cP, 6cP and 45 lb/100sqft. For the fluid sample with coconut husk as polymer, PV, AV, YP and Gel strength is respectively 6cP, 7cP, 2cP and 19 lb/100sqft. - Less value of PV, AV, YP and Gel strength using coconut husk as additive. ② No change in the L.C value. ③ Mud cake thickness is more for the sample with coconut husk as additive. ④</p>
<p>Name and Signature with date of the students</p>	<p>V. Jai Spharathi <i>Jai Spharathi</i> [21st June 22] Roshan. T Naif Nihad Ali Hithesh. T Fazil. S</p>

Jai Spharathi
REGISTRAR Registrar
PRESIDENCY UNIVERSITY BANGALORE

Event Category:	Experiential learning	Date:	01-12-2022 (1 Day)
Event Category:	Technical	Event Type:	Laboratory
Mode of Event:	Online/Offline	No. of Participant(s):	30
Year	2 nd Year	Semester:	III
Event Organizer	Department of Petroleum Engineering, Presidency University		
Name of the faculty	Dr. Sidharth Gautam Assistant Professor, Department of Petroleum Engineering		

Article name	Estimation of the consistency index of provided sample lubricant.
---------------------	--

Article description

The characteristics of lubricants may be evaluated based on some of their properties, such as: density, viscosity, vapor pressure, freezing point, acid number, etc. In this experiential learning session, the participants were trained to operate drop cone penetrometer apparatus through which consistency of a lubricant/grease sample can be determined.

Consistency is resistance to deformation by an applied force. The measure of consistency is penetration. Penetration is defined as the depth of penetration (expressed in 10th of millimeters) of a metallic cone with standardized shape and dimension into a solid grease sample for a period of 5 seconds. Penetration tests (ASTM - D217) are performed on petroleum products to determine consistency and shear stability (lubricating greases) for design, quality control and identification purposes. A standard cone or needle is released from a penetrometer and allowed to drop freely into the sample for 5 seconds (or a different specified interval) at constant temperature. A penetration of 100 would represent a solid grease while one of 450 represents semisolid. The NLGI has established consistency number or grade number, ranging from 000 to 6, corresponding to specified ranges of penetration number.

REGISTRAR





Sidharth Gautam

Faculty Incharge

Dr. Sidharth Gautam

Assistant Professor

Department of Petroleum Engineering

Sidharth
REGISTRAR Registrar
PRESIDENCY UNIVERSITY
BANGALORE