

# MID-TERM STRATEGY FOR **OIL AND GAS PRODUCTION** ENHANCEMENT

Rajahmundry Asset  
2025









## MESSAGE

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I am happy to note that Rajahmundry Asset has come out with a midterm strategy for the oil and gas production for the Asset till March'26. This mid-term production strategy outlines a roadmap for the Asset for a sustainable and cost-effective hydrocarbon production with optimized utilization of resources, infrastructure, talent pool, excellence and innovation.

The Rajahmundry Asset plays a crucial role in contributing to India's energy security. The fields of the Asset are challenging with portfolio of HPHT fields. This strategy document meticulously analyzes the current production scenario, identifies key challenges, fields and wells specific analysis with deep dive, and proposes a comprehensive plan to enhance production, stabilizing decline, and maximize economic returns.

I commend the team for their dedication and hard work in developing this strategic roadmap. The successful implementation of this strategy will not only bolster the asset's production but also contribute significantly to ONGC's overall growth trajectory.

I urge all stakeholders to embrace this strategy with enthusiasm and work collaboratively towards its successful execution.

**Pankaj Kumar**  
Director (Production)





## FOREWORD



**Santanu Das**  
ED- Asset Manager  
Rajahmundry asset

In the competitive landscape of the global oil and gas industry, achieving sustained growth and operational excellence is not merely a goal but a strategic imperative. Rajahmundry Asset is continuously striving to augment the production of oil and gas on sustainable basis. This mid-term strategy report is a testament to our commitment to maximizing its potential. With a clear objective to substantially increase oil and gas production by March 2026, this document outlines our comprehensive approach, driven by meticulous analysis and strategic planning.

This report is more than a strategic plan; it represents our unwavering commitment to operational excellence and production growth. The strategies outlined herein reflect a blend of rigorous analysis, innovative techniques, and a steadfast dedication to achieve our production targets. Recognizing the importance of resources availability, we have meticulously accounted for these factors in our planning and prepared a detailed time frame for the execution of various planned jobs. Our focus on sustainability ensures that our approach not only addresses immediate challenges but also supports the long-term viability and efficiency of our operations.

This approach involves a thorough well specific and field specific analysis of the root causes of decline in the production and the working of viable solutions. Asset team has undertaken an extensive evaluation focusing on the fields of Goapavaram, Malleswaram, Kesanapalli, Mandapeta, Pasarlupudi and Kesavadasupalem. This report synthesizes a broad spectrum of analyses, from detailed well log assessments to intervention strategies, all aimed at unlocking the full potential of these fields. Reservoir characterization, production history analysis, formation evaluation, in-depth log evaluation are the analytical components to form the foundation of the strategy.

For the execution part a set of intervention strategies have been devised tailored to both rig-based and rigless operations like workover, Hydraulic fracturing, Coil tubing, flow assurance treatment, slickline etc. These strategies are designed to enhance well productivity and address specific challenges encountered in each field.

As we advance with the implementation of these strategies, our commitment to continuous improvement, technological advancement, and maximizing the potential of the Rajahmundry Asset remains resolute. We extend our sincere appreciation to the team whose expertise and dedication have been instrumental in crafting this report. Their collective efforts underscore our commitment to advancing the Rajahmundry Asset and achieving our strategic objectives.

With confidence in our strategies and a commitment to excellence, we look forward to realizing our production goals and reinforcing the Rajahmundry Asset as a key driver of our success in the oil and gas sector.

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January 2025

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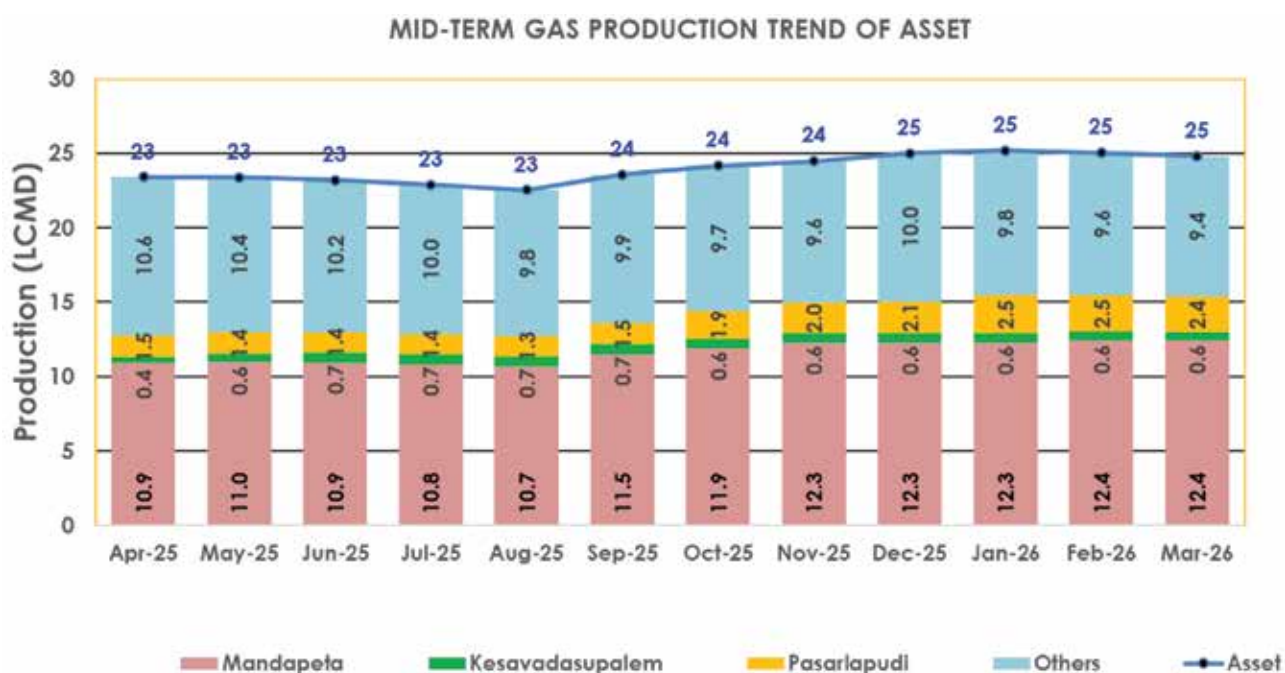
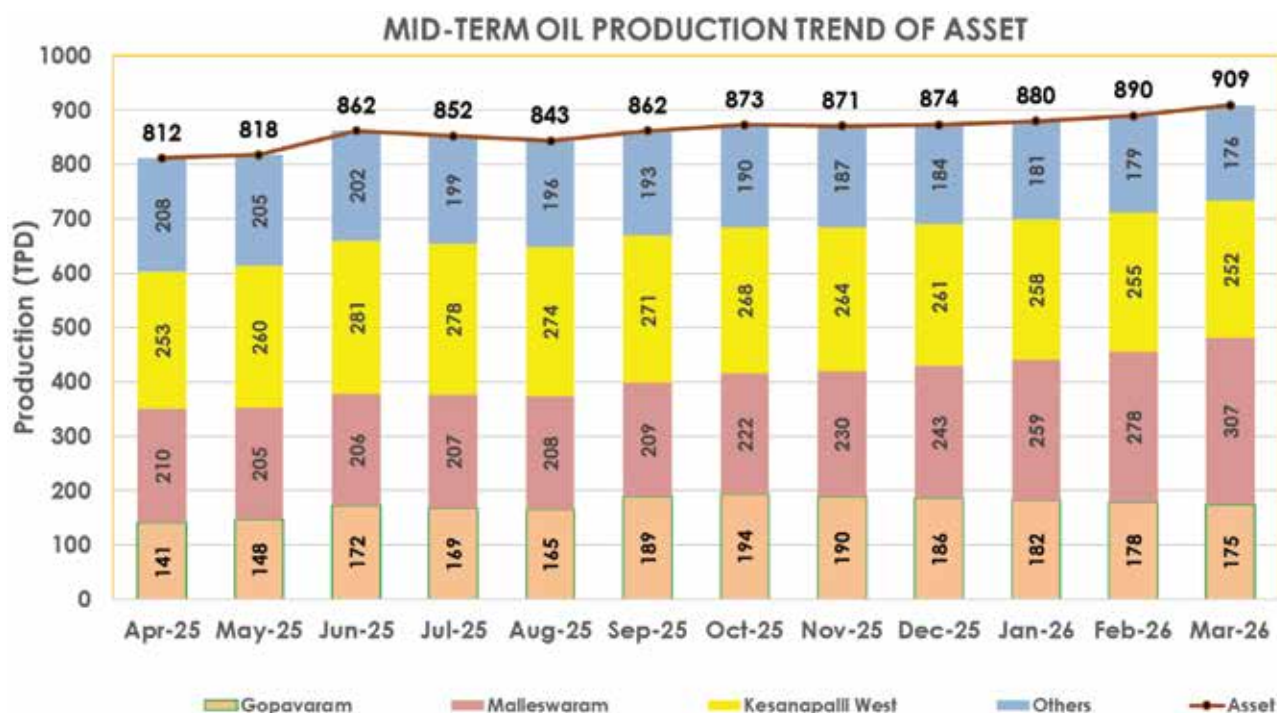
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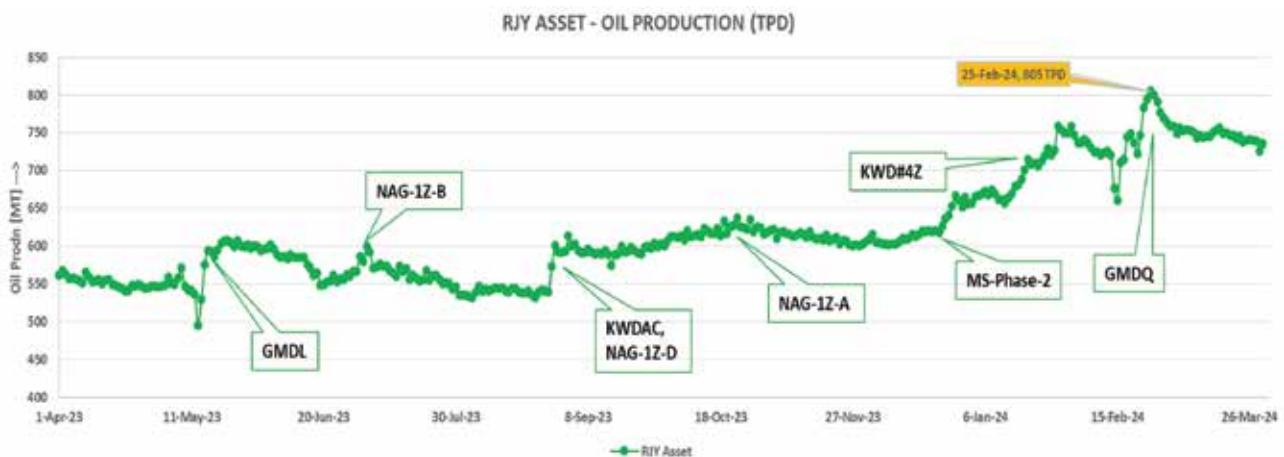


## OIL AND NATURAL GAS CORPORATION LIMITED



## 1.0 INTRODUCTION

Rajahmundry Asset achieved 0.227 MMT of onshore oil production for FY 2023-24, against the Annual MOU & BE Target of 0.221 MMT, which is 103% of MOU Target, also produced highest oil production since last three years and 103% more than last financial year oil production of 0.220 MMT.



### *Asset Oil Production Performance for FY 2023-24*

Rajahmundry Asset is unique with combination of conventional and unconventional pays and each has its own challenges and complexities. In conventional pays like Kesanapalli West and Gopavaram Oil Fields, challenge is to find new zones and missed opportunities through Work Over and infill drilling with focus on early exploitation, along with water shut off and additional perforation with advanced technology.

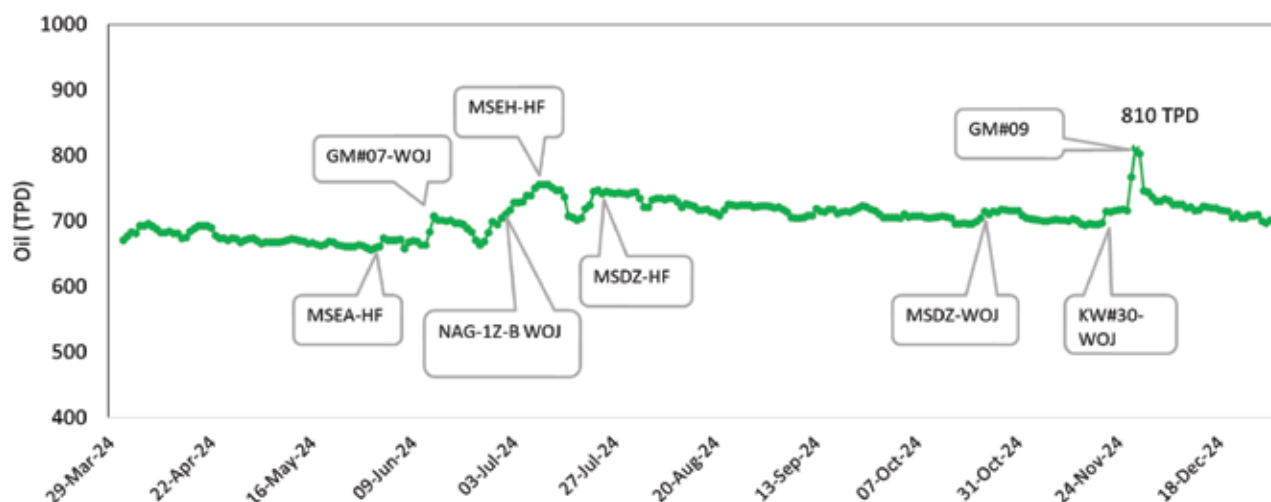
Similarly, for unconventional field like Malleswaram with tight reservoirs, high temperature along with flow assurance issues, challenge is monobore completion, multistage precise Hydraulic fracturing, and putting back wells on production immediately and regular solvent jobs with CTU/HOC to prevent well ceasure.



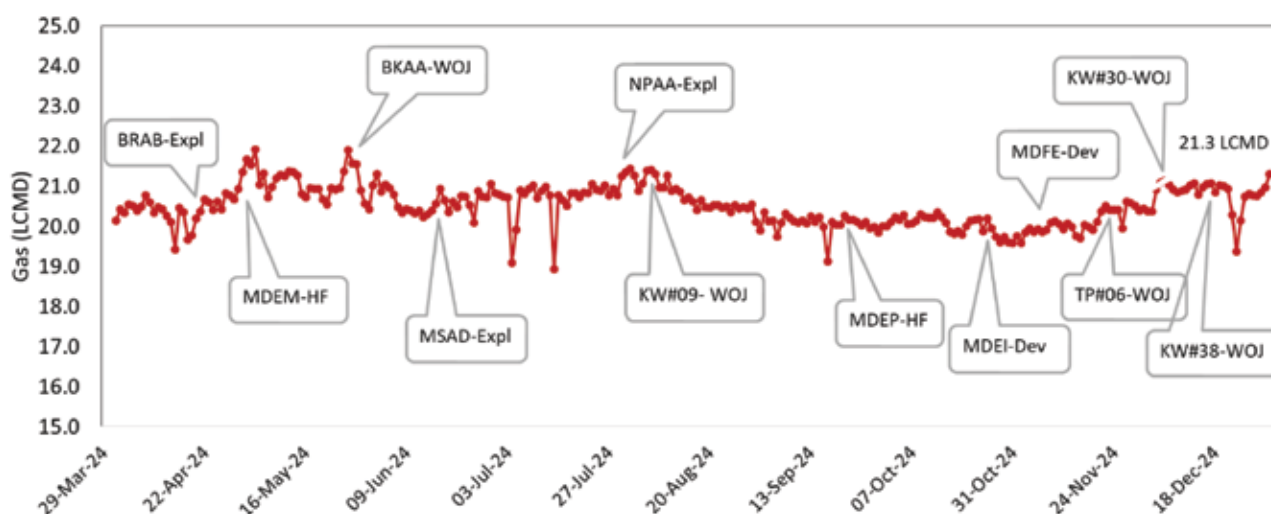


With the implementation of the “Short Term Strategic Action Plan”, Asset has been able to revive production to the level of 750 TPD of oil and 21.4 LCMD of gas in July-24.

**Oil Production Performance, FY 2024**



**Gas Production Performance, FY 2024**



*Asset Oil & Gas Production Performance from Apr to Dec-24*

With a vision to arrest the decline and augment the Asset production to the level of 900 TPD+ and 25 LCMD+, Rajahmundry Asset under leadership of ED-Asset Manager constituted an MDT for Mid-term Strategy for Production Enhancement for the period from Apr-25 to March-26 with key stakeholders of Sub surface Team, Surface Team, Well Services, Drilling, Logging and other support services.

The Committee has analysed and prepared a report with field specific action plan along with timelines to augment oil and gas production of the Asset.











## 02. MID-TERM ENHANCEMENT PLAN FOR OIL

Three fields in Rajahmundry Asset i.e. Gopavaram, Kesanapalli West and Malleswaram field contributes approximately 85% of oil production of the Asset. A detailed mid-term action plan/strategy is prepared upto Mar 2026, for all the oil fields of Rajahmundry Asset.

### 2.1 Gopavaram Field

Gopavaram field is presently producing around 115 TPD. With successful development drilling of two wells GMDL and GMDQ, and regular work over including well optimisation and TTP in GM#9 Gopavaram field production touched peak of 225 TPD in 28th Nov-24, which is the highest field production for ever.

Under Mid-term build up for Oil, Asset has planned drilling of 3 new locations with total envisaged gain of 60 tpd and 4 work over jobs with mid-term potential of 34 tpd.





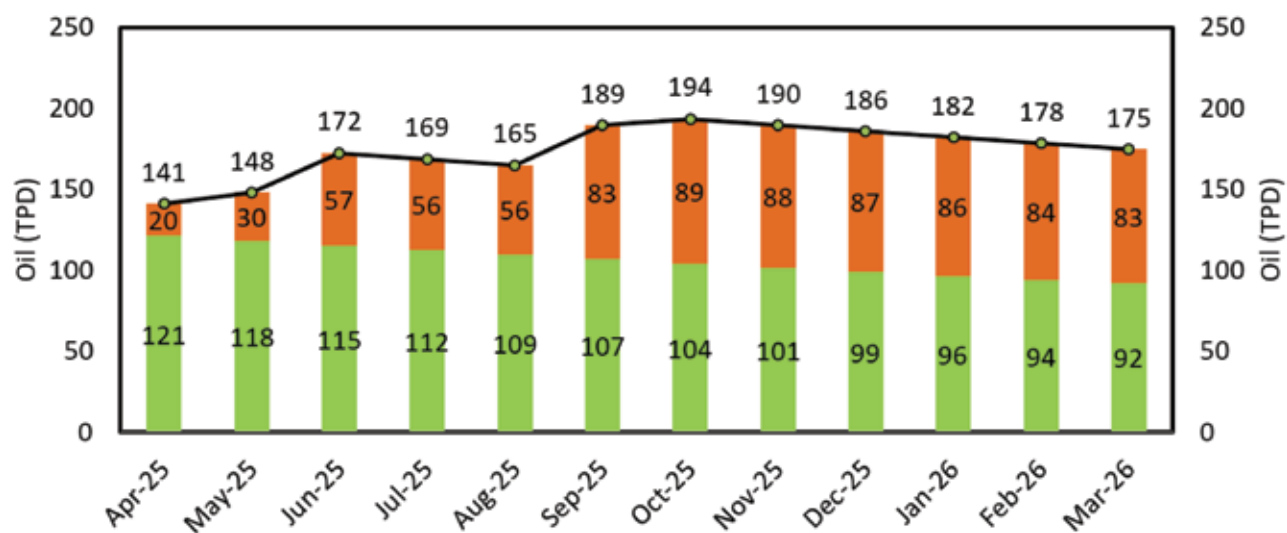
### Inputs with Envisaged Gain and Tentative timelines

Work over inputs with timeline				
Well	Reason	Action Plan	Tentative Timeline	Envisaged Gain (TPD)
GM-12	Water loading	WSO+ Selective Perforation	May-25	10
GM-16	Water loading	WSO+ Selective Perforation	Jun-25	8
GM-17	Water loading	WSO+ Selective Perforation	Sep-25	8
GM-18	Water loading	WSO+ Selective Perforation	Oct-25	8
Total Potential				34

Drilling inputs with timeline			
Well	Target Sand	Tentative Timeline	Envisaged Gain (TPD)
GMDP (Rig in location)	SD-10	Apr-25	20
New Well	SD-10	Jun-25	20
GMDS	SD-10	Sep-25	20
Total Potential			60



Mid-term enhancement Plan for Gopavaram Field  
Gopavaram Field



### Tentative Timeline of Activities Planned in Gopavaram Field

[illegible]



## 2.2 Malleswaram Field

In the tight Oil field Malleswaram, Asset has successfully carried out Phase-I HF and now Phase-II HF is underway. As a result, Malleswaram field has achieved highest ever Oil production of 246 tpd in Jul-24. Malleswaram field being a challenging field, suffers higher decline after HF jobs and require regular scrapping/CTU/HOC jobs to maintain production.

Under Mid-term build up for Oil, Asset has planned drilling of 6 new locations with envisaged gain through HF of 72 TPD and 6 workover jobs including HF jobs, gas lift installation and control line assembly installation in wells at prerequisite depth for injection of solvent fluid at single point without any well intervention. The envisaged midterm potential from work over job plus 11 rigless job is 73 TPD.





## Inputs with Envisaged Gain and Tentative timelines

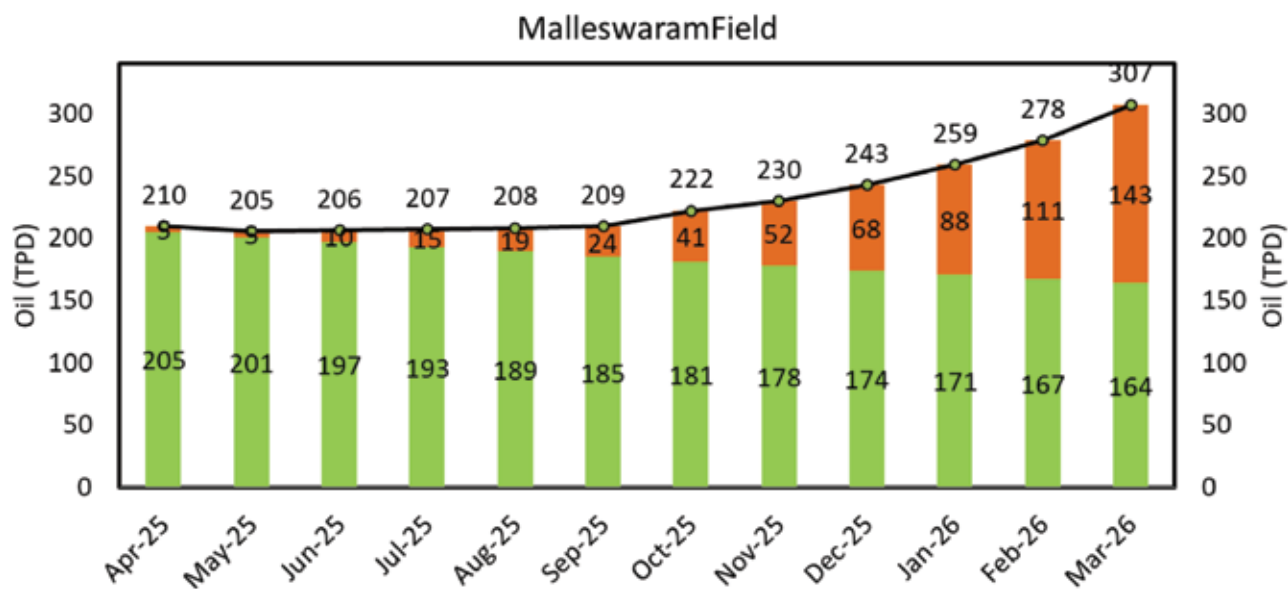
Work over & HF Inputs with Timeline			
Well	Action Plan	Tentative Timeline	Envisaged Gain (TPD)
MSDH	Hydrofracturing	Mar-26	10
MS-4	Workover		5
MS-5			5
MS#29			5
MS#27			5
MS#15			5
MS#20_Z			5
Total Potential			40

Drilling followed by HF with Timeline			
Well	Action Plan	Tentative Timeline	Envisaged Gain (TPD)
MSEC	New Development Wells with HF	Oct-25	12
MSED		Nov-25	12
MSEF		Dec-25	12
MSEG		Jan-26	12
MSDS_S		Feb-26	12
MSDW		Mar-26	12
Total Potential			72

Rigless Inputs with Timeline			
Well	Action Plan	Tentative Timeline	Expected Gain (TPD)
MS-15	Flow assurance Job	Jan-26	3
MS-7	Flow assurance Job	Jan-26	3
MS-20_Z	Flow assurance Job	Jan-26	3
MS-19	Flow assurance Job	Feb-26	3
MS-9A	Flow assurance Job	Feb-26	3
MS#21	Flow assurance Job	Feb-26	3
MS#24	Flow assurance Job	Feb-26	3
MS#1	Flow assurance Job	Mar-26	3
MS#5	Flow assurance Job	Mar-26	3
MS#6	Flow assurance Job	Mar-26	3
MS#16	Flow assurance Job	Mar-26	3
Total Potential			33



# Mid-term enhancement Plan for Malleswaram Field



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### Tentative Timeline of Activities Planned in Malleswaram Field

[illegible]



## 2.3 Kesanapalli West Field

Currently field is producing @ 157 TPD. Under Mid-term build up for Oil, Asset has planned drilling of 3 new locations with envisaged gain of 55 tpd and 5 work over jobs with Mid-term potential of 30 tpd.

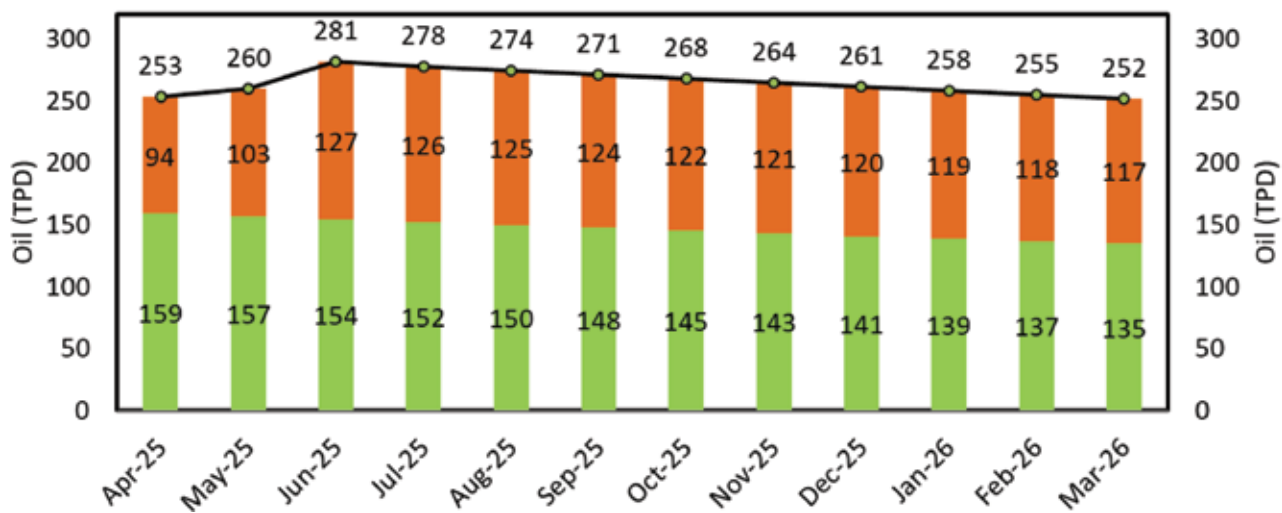


### Inputs with Envisaged Gain and Tentative timelines

Work over plan			
Well	Action Plan	Tentative Timeline	Envisaged Gain (TPD/scmd)
KW-45_Z	Z/T to SD-17 or SD-15B/C or SD-13, to be decided after carrying out CHFR.	Apr-25	10
KWD-3_Z	Z/T to new sand (2792-2795 m)	May-25	5
KW-29_Z	Z/T to SD-15B or 18B, to be decided after carrying out CHFR	Jun-25	5
KW#04	Z/T based on CHFR Log	Apr-25	5
KW-13	Z/T to SD-9, to be decided after carrying out CHFR	May-25	5
Total Potential			30

Available Locations			
Well	Target Sand	Tentative Timeline	Envisaged Gain (TPD)
KWEG (Rig in location)	SD-24	Mar-25	20
KWEH	SD-23	Jun-25	20
I-KW-3	SD-24	Dec-25	15
Total Potential			55

## Mid-term enhancement Plan for Kesanapalli West Field



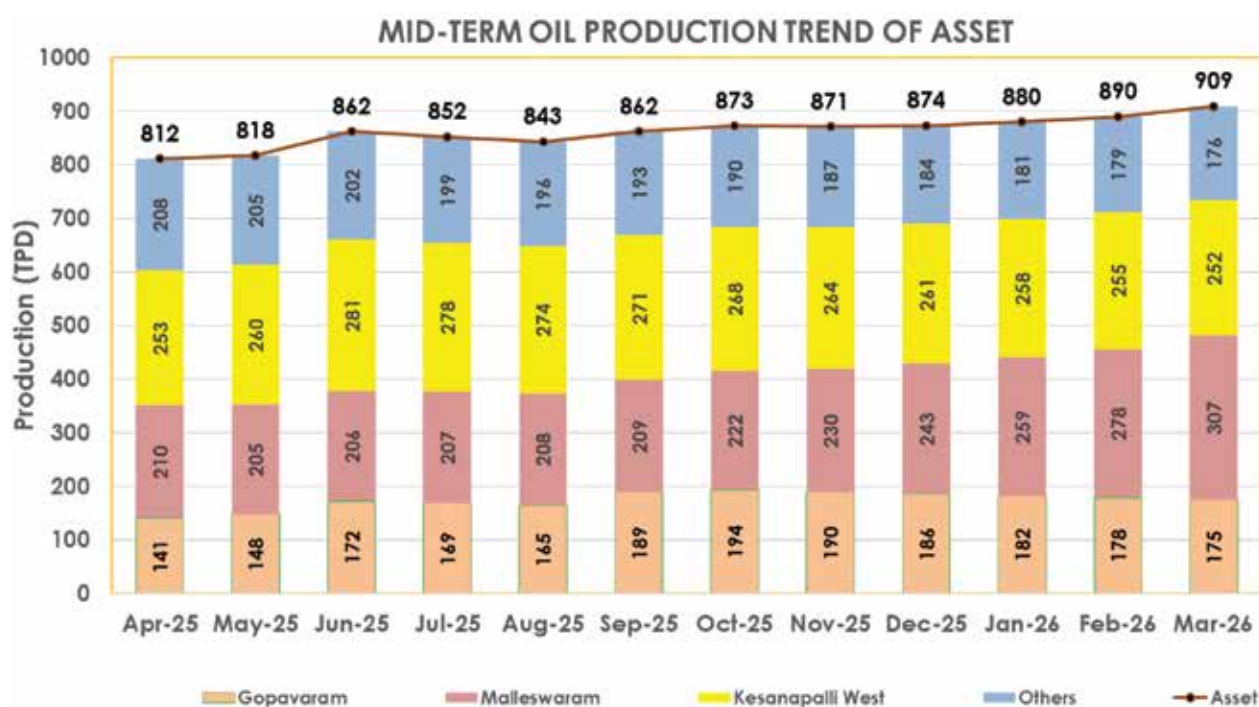
### Tentative Timeline of Activities Planned in Kesanapalli West Field

	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26
KW-9		Workover																				
KW-32			Workover																			
KW-25				Workover																		
KW-30					Workover																	
KWD-7					Workover																	
KWD-3_Z						Workover																
KWD-2									Workover													
KWEG									Drilling													
KW-38										Workover												
KW-13												Workover										
KW-29_Z														Workover								
KW-45_Z																Workover						
I-KW-4												Drilling										
I-KW-3																Drilling						
KW-15_LS																		Workover				



## 2.4 Summary of Mid-Term enhancement plan for Oil

Under Mid-term Projection for Oil, production of Asset projected to touch 909 TPD by Mar-26 through aggressive exploitation strategy through work over intervention with limited resources, multi stage hydraulic fracturing, rig less activation jobs, PEF/Additional perforation jobs, bean optimisation, deployment of regular CTU/N2/compressor for water unloading, HOC/solvent jobs unlocking the potential from new sands of Gopavaram, Kesanapalli deep sands, tight sands of Malleswaram and Nagayalanka fields.



Mid-term Projection for Oil for Asset



## 3.0 MID-TERM ENHANCEMENT PLAN FOR GAS

Three fields in Rajahmundry Asset i.e. Mandapeta, Pasarlapudi and Kesavadasupalem contribute approximately 60% of gas production of the Asset. A detailed Mid-term action plan/strategy is prepared for each of these three fields.

### 3.1 Mandapeta Field

Mandapeta field is the major tight gas producing field of the Asset and the field is presently producing around 11.0 LCMD gas. With successful development drilling and HF campaign, the field production has crossed 10 LCMD for the first time.

Under Mid-term build up for Gas, Asset has planned drilling of 4 new wells followed by HF and monetisation of 9 wells with HF with envisaged potential of 3.6 LCMD. Additionally, 1.3 LCMD of gas gain is envisaged from work-over job and LP compressor capacity augmentation.







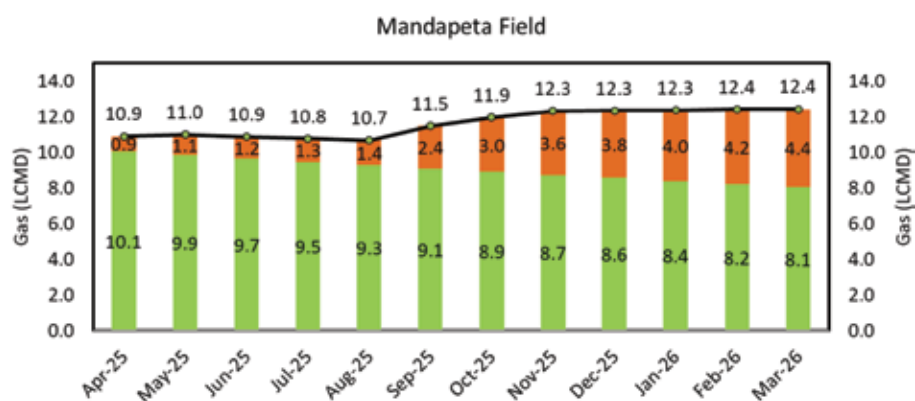
### Inputs with Envisaged Gain and Tentative timelines

Well	Action Plan	Timeline	Envisaged Gain (m3/d)
MDP#29	tubing change+ plunger installation	Apr-25	10,000
MDS#1	tubing change+ plunger installation	May-25	10,000
MD#31	tubing change+ plunger installation	Jun-25	10,000
MD#33	tubing change+ plunger installation	Jul-25	10,000
MD#49	tubing change+ plunger installation	Aug-25	10,000
MD#57	tubing change+ plunger installation	Sep-25	10,000
MDSG#1	tubing change+ plunger installation	Oct-25	10,000
MD#32	tubing change+ plunger installation	Nov-25	10,000
Total Potential			80,000

Well	Action Plan	Timeline	Envisaged Gain (m3/d)
MDEG	HF	Apr-25	30,000
MDFC	--	May-25	20,000
MDEO	HF	SEP-25	30,000
MDFD	HF	SEP-25	30,000
MDEU	HF	Oct-25	30,000
MDFE	HF	Oct-25	30,000
MDDP	HF	Nov-25	25,000
MDEW	HF	Nov-25	25,000
MDFE	HF	Jan-26	25,000
Total Potential			2,45,000

\* Gain will be realized post HF

Well	Action Plan	Timeline	Envisaged Gain (m3/d)
MDFM	New Development Locations*	Dec-25	25,000
MDFN		Sep-25	30,000
MDEQ		Feb-26	30,000
MDFH		Mar-26	25,000
Total Potential			1,10,000



**Mid-term enhancement Plan for Mandapeta Field**

Wells	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26
MDP#29												
MDS#1												
MD#31												
MD#33												
MD#49												
MD#57												
MDSG#1												
MD#32												
MDFC												
MDEG												
MDEO												
MDFD												
MDFN												
MDEU												
MDFE												
MDDP												
MDEW												
MDFM												
MDFP												
MDEQ												
MDFH												
MDEV												
MDFL												
MDFI												
MDFK												
LP Compressor												



### 3.2 Pasarlapudi Field

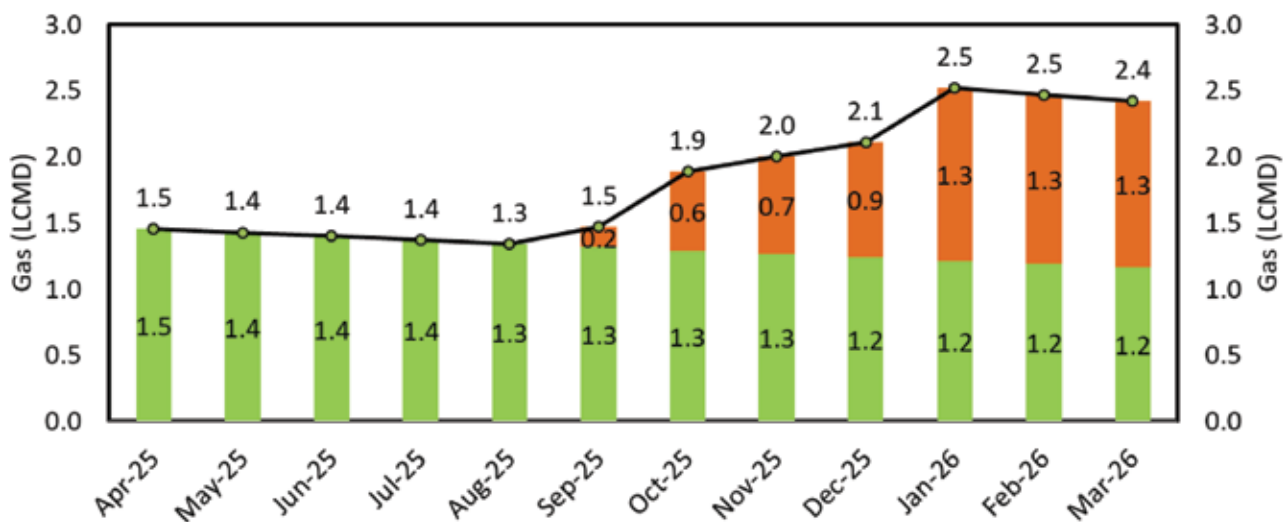
Under Mid-term build up for Gas, Asset has planned 5 workover jobs in Pasarlapudi with a total potential of 0.75 LCMD. Along with that two new development locations are also incorporated which will add the gain of 60,000 scmd.



**Inputs with Envisaged Gain and Tentative timelines**

S.No	Well	Action Plan	Timeline	Envisaged Gain (m3/d)
1	PS-24	Z/T to Sd-15	Sep-25	15,000
2	PS-29	Re-completion in Sd-14	Oct-25	15,000
3	PS-49	Tubing change and installation of Plunger Lift	Nov-25	15,000
4	PS-4	Polymer Water shut off	Dec-25	15,000
5	PS-17	Polymer Water shut off	Jan-26	15,000
7	PSDP_Shift	New development well	Oct-25	30,000
8	PSDV	New development well	Jan-26	30,000
Total Potential (m3/d)				1,35,000

### Pasarlapudi Field



### Tentative Timeline of Activities Planned in Pasarlapudi Field

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### 3.3 Kesavadasupalem Field

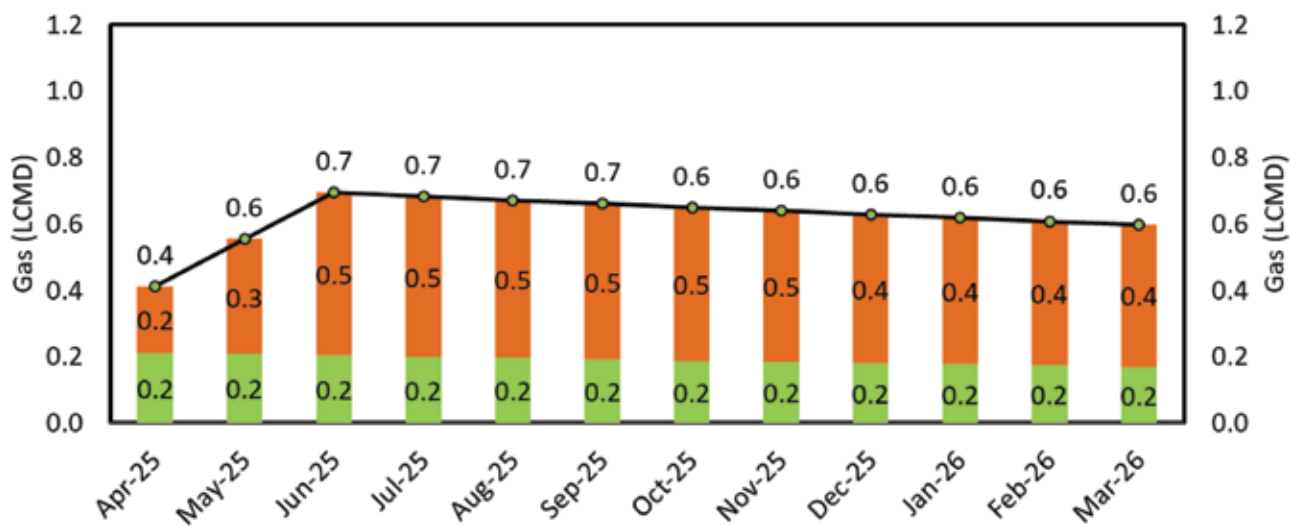
Under Mid-term build up for Gas, Asset has planned a total of 4 work over jobs with a total potential of 0.5 LCMD.



#### Inputs with Envisaged Gain and Tentative timelines

S.No	Well	Action Plan	Timeline	Envisaged Gain (m3/d)
1	KV-5	Recompletion in Sd-28 with Gravel Pack/Sand screen	Mar-25	10,000
2	KV-15	Recompletion with SRP	Apr-25	10,000
3	KV-26	Z/T to SD-34 or SD-46, to be decided after carrying out CNL	May-25	15,000
4	KV-32	Z/T to SD-32 or SD-34, to be decided after carrying out CNL	Jun-25	15,000
Total Potential (m3/d)				50,000

### Kesavadasupalem Field



### Tentative Timeline of Activities Planned in Kesavadasupalem Field

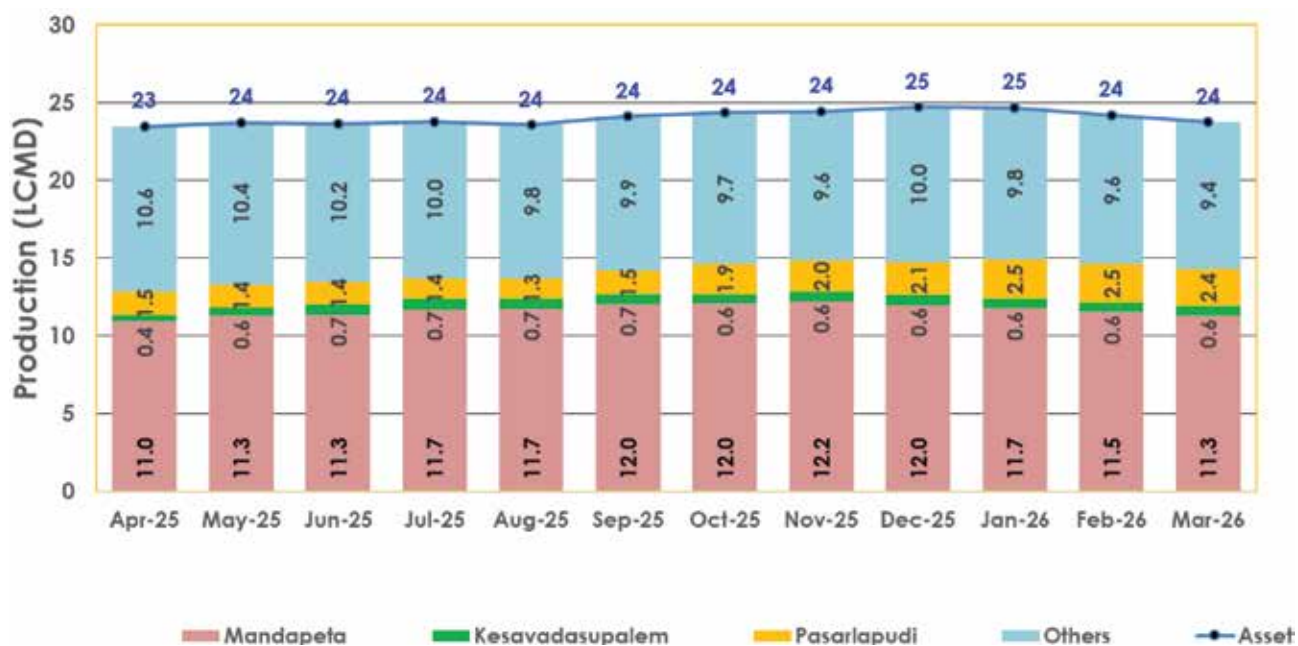
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### 3.4 Summary of Mid-term enhancement plan for Gas

With all these envisaged inputs mentioned above, under Mid-term Projection for Gas, Asset is projected to reach 26.1 LCMD by Mar 26.

Mid-term Projection for Gas for Asset



### Summary

With all these inputs, Asset plans to achieve oil production of 909 tpd and gas production of 25 LCMD by March-26.











## 4.0 STRATEGY FOR SUSTAINABLE PRODUCTION ENHANCEMENT



In the previous sections Asset's well wise plan mainly through work over, drilling and rigless intervention have been documented. But for long term strategy on sustainable production Asset has planned/planning multiple initiatives such as

- Drilling of horizontal wells
- Flow assurance solution in Malleswaram
- Installation of gas lift in Malleswaram & Nagayalanka
- Fast track development of Billakuru and Madupalli field
- Production enhancement of Gopavaram Field
- Development of Mandapeta Field
- Phase-III Development of Nagayalanka Field
- Smart deployment strategy of Workover Rigs
- Hiring of CTU, Workover rig and Phase-III HF campaign
- Rigless revival of gas wells of Pasarlupudi and Kesavadasupalem Field

### Drilling of horizontal wells

It is a common practice to exploit tight reservoirs through horizontal wells with multistage fractures. In line with this Asset is working on the feasibility of drilling horizontal wells in Malleswaram and Mandapeta. Both the fields are very early stage of exploitation and recovered only 1% and 11% respectively of its original hydrocarbon in place. These two fields are critical for Assets future.

### Flow assurance issues in Malleswaram

One of the most critical issues in sustainable production of Malleswaram is the acute flow assurance problem. Malleswaram crude is highly colloiddally unstable leading to both paraffin and asphaltene deposition both around wellbore and tubulars. This has caused severe production disruption in these wells. In the immediate term, Asset used a flow assurance chemical "Prosolve 110" on nomination basis in three wells. Result of these wells are encouraging and are as mentioned below:



Date of PROSOLVE 110	Well No	Before PROSOLVE 110			After PROSOLVE 110			Current Production				Used PROSOLVE 110 Qty.
		Avg FTHP (psi)	Avg Qliquid (m3/d)	Avg Qoil (m3/d)	FTHP (psi)	Qliq (m3/d)	Qoil (m3/d)	Date	FTHP (psi)	Qliq (m3/d)	Qoil (m3/d)	
24-05-2024	MS#07	60-180	3.91	3.69	200	14.5	13.5	29-07-2024	170	12.3	11.2	4.2 KL
30-05-2024	MS#17	380	11.47	10.58	350	22	21	29-07-2024	400	23.6	22.2	2.2 KL
11-06-2024	MS#20z	120-150	6.61	5.44	180	13	12	29-07-2024	110	5.25	4.05	1.6 KL



In the mid-term Asset planned to hire technical service provider for detail lab study followed by rigless field implementation in ~25 wells.

### Installation of gas lift in Malleswaram

Presently no gas compression facility is available in Malleswaram and hiring of the same is under progress through NTA. Since, it has lead time, Asset implemented an innovative method for fast initiation of gas lift in Malleswaram by monetizing EWIP gas well MSAD and uses its high-pressure gas directly for gas lift which has resulted in a gain of around ~ 50 TPD from 04 wells. Another 11 wells shall be completed through gas lift. Malleswaram with the installation of gas lift and successful completion of three wells through multistage HF has achieved its highest ever production of 246 TPD in July-24.

Meanwhile Asset is also working on the gas lift network in Nagayalanka filed.

### Fast track development of Billakuru and Madupalli field:

The gas field of Billakuru and Madupalli have been discovered in 2019 & 2021 respectively. The FDP was submitted to DGH in 2022. DGH recommended extended well testing in Madupalli and testing of PS category sand of Billakuru as a pre-condition for the approval of the FDP. The six month testing of Madupalli has been completed and the well is flowing @ 70,000 scmd. And the well BKAAs has been worked over and completed in PS category sand and currently producing @ 75,000 scmd. IRS has been requested to complete the revisit of the FDP by end of this year. Parallely, Asset is building the surface facility in Madupalli.

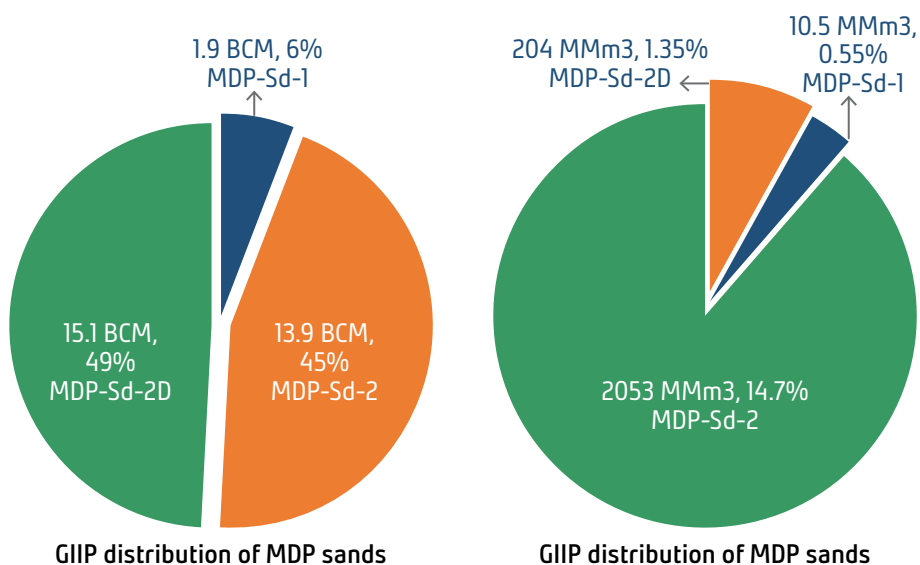
### Production enhancement of Gopavaram Field:

IRS is working on dynamic modelling in recently completed Geo- cellular model of Gopavaram field. The Asset strategy is to focus on the least exploited bottom most sand SD-6 of the field which has recovered only 10% of the STOIIIP. The advantage of the drilling wells for Sd-6 is that all the wells shall be drilled through remaining sands of Gopavaram resulting in risk mitigation of new development locations.



### Development of Mandapeta Field:

Mandapeta field is the highest gas producer of the Asset and currently produces @ 11.3 LCMD. It has mainly two sands: Sd-2 & SD-2D. Most of the wells are completed with HF in both the sands. Asset has planned multiple PLT jobs to understand layer-wise contribution in Mandapeta. There is an apprehension that SD- 2D is not contributing as envisaged. The current recovery status is as follows:



Moreover, to cater the pressure decline in Mandapeta, LP compressor facility has been planned to increase by hiring a LP compressor of 1 LCMD capacity in short term and in the long-term, the shipment of 4 LCMD LP compressor from Tatipaka to Mandapeta.

### Phase-III Development of Nagayalanka Field:

The Phase-II development of Nagayalanka field along with effective workover, the field has achieved its highest ever production of 228 TPD in July-24. The new GCM incorporating the phase-II wells have been completed and IRS has been assigned for dynamic modelling for Phase-III development which is to be completed by March-25.

### Smart deployment strategy of Workover Rigs:

The Kesanapalli West field of the Asset has multiple reservoirs and significant number of non-flowing wells. Asset has revisited all the logs of the non-flowing wells and planned multiple zone transfers jobs for production enhancement as well as revival of non-flowing wells.

The deployment of workover rigs to revive these wells have been planned by considering cluster locations to reduce rig movements and increasing rig month availability resulting in cost optimization and fast realization.



### **Hiring of CTU, workover rig and Phase-III HF campaign:**

Asset has already initiated the proposal of hiring of CTU, workover rig and Phase-III HF campaign for 15 wells to monetize and sustain production of Mandapeta, Malleswaram & Nagayalanka.

### **Rigless revival of gas wells of Pasarlapudi and Kesavadasupalem Field:**

The rigless Water Shutoff has been planned in watered out wells of Kesavadasupalem and Pasarlapudi gas field for revival.





**RAJAHMUNDRY ASSET**