



ACCESS TO SAFE WATER

REPORT ON WATER SAFETY PLANNING ASSESSMENT

YEAR - 2023-24



**INREM FOUNDATION AND UNICEF-RAJASTHAN
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Abbreviations

ASHA	Accredited Social Health Activist
AWC	Anganwadi Centre
BIS	Bureau of Indian Standards
CGWB	Central Ground Water Board
DALY	Disability-Adjusted Life Years
DDWS	Department of Drinking Water and Sanitation
DPMU	District Program Management Units
DWSM	District Water & Sanitation Mission
FHTCs	Functional Household Tap Connection
FTKs	Field Test Kit
GAPPD	Global Action Plan for the Prevention and Control of Pneumonia and Diarrhea
H₂S	Hydrogen Sulfide
IEC	Information, Education and Communication
INREM	India Natural Resource Economics and Management
ISA	Implementation Support Agency
MoJS	Ministry of Jal Shakti
NJJM	National Jal Jeevan Mission
PHED	Public Health Engineering Department
RSPACC	Rajasthan State Action Plan on Climate Change
SDG	Sustainable Development Goals
SWSM	State Water & Sanitation Mission
UNICEF	United Nations Children's Fund
VWSC	Village Water & Sanitation Committee
WASH	Water Sanitation & Hygiene
WHO	World Health Organisation
WQMS	Water Quality Monitoring & Surveillance
WSP	Water Safety Plan



Abstract

National Jal Jeevan Mission (NJJM) is a flagship water supply scheme aimed at providing a safe and adequate water supply to ensure potable drinking water for every rural household and public institution. NJJM's Drinking Water Quality Monitoring & Surveillance Framework comprehensively lays out recommended measures for compliance with the prescribed drinking water standards of BIS 10500 (2012). Derived from the World Health Organisation (WHO) Water Safety Planning (WSP), this assessment analyzed the water quality standards from source to point of use at the village level and explored existing water storage and handling practices within the community.

In order to understand access to safe water in Pratapgarh District in Rajasthan, the study used a mixed-method approach. Two blocks were chosen, one near the district headquarters and one far from the headquarters, to understand the disparities among different geographies. Checkpoints such as the source and the consumer end were examined via microbial and chemical testing. Household surveys and sanitary surveys were conducted to understand local behaviour pertaining to drinking water storage, handling, and sanitation within the selected village.

Household-level water testing indicated microbial contamination in water containers, particularly in the block far from the headquarters, emphasizing the crucial role of proper storage and handling practices. The findings also highlighted prevalent issues with the placement of Functional Household Tap Connections (FHTCs), and the need to share drinking water quality test data with the community.

The recommendations advocate for the integration of climate-resilient water safety planning in lieu of drastically increasing extreme climate-related events. Promotion of simple household water treatment practices, monitoring of sanitary conditions around tap connections as well as water sources and enhancing community engagement in water quality discussions are some key recommendations that emerged from this assessment. Advocating for feasible and actionable solutions combined with community participation, is crucial to ensuring access to safe water in Pratapgarh district, Rajasthan.





Background

In 2016, 1.9 million deaths and 123 million Disability-adjusted life-years (DALYs) were attributed to inadequate Water Sanitation & Hygiene (WASH) facilities and practices.¹ This accounts for 3.3% of global deaths. In India, 5% of all DALYs are caused due to WASH-related diseases, out of 22% of DALYs are due to behavioural factors.² A significant fraction of overall deaths and DALYs is attributed to inadequate WASH services and practices, especially in low- and middle-income countries.³ Household water storage, handling, and sanitation practices play a crucial role in influencing the risk of waterborne illnesses and outbreaks.⁴ Studies have indicated a significant increase in bacteriological contamination of water during collection, handling, and storage processes.⁵

Vulnerability due to water, both its scarcity and poor quality, is increasing as the incidents of climate change become frequent. A recent publication titled *The Climate Changed Child*⁶, highlights the increased vulnerability of 739 million children worldwide due to water scarcity heightened by the effects of climate change.

Depletion of water resources or its contamination affecting the water quality undermines the effectiveness of WASH interventions.⁷ Poor water quality has many health implications, such as diarrhea, dysentery, typhoid, etc. Coupled with poor sanitation, the transmission of waterborne diseases can escalate, posing severe threats to public health.⁸ The provision of safely managed drinking water and sanitation can protect communities from many preventable health risks.

Rationale

Water-borne outbreaks and diseases arise from both microbial and chemical contamination. The Public Health and Engineering Department (PHED), as a service-providing institution, must regularly monitor water quality at both sources and in treated water supplies to ensure access to safe drinking water. Proactive measures to protect public health from harmful contaminants include conducting sanitary surveys and

¹ WHO-Impact of 'Har Ghar Jal' Program. (2023, June 9). PIB. Retrieved December 4, 2023, from <https://pib.gov.in/PressReleaseFramePage.aspx?PRID=1930998>

² Goyanka, R. (2021). Burden of water, sanitation and hygiene related diseases in India. Elsevier.

³ Annette Prüss-Ustün, Wolf, J., & Bartram, J. (2019). Burden of disease from inadequate water, sanitation and hygiene for selected adverse health outcomes: *IJHEH*, 765-777.

⁴ Manga, M., & Ngobi, T. G. (2021, February 2). The effect of household storage tanks/vessels and user practices on the quality of water. ResearchGate.

⁵ Wright, J. I., Gundry, S., & Conroy, R. (2004). Household drinking water in developing countries: a systematic review of microbiological contamination between source and point-of-use. *Tropical Medicine & International Health*, 106-117.

⁶ United Nations Children's Fund, *The climate-changed child: A children's climate risk index supplement*, UNICEF, New York, November 2023.

⁷ Water and Sanitation (WASH). (n.d.). EHA Connect. From <https://ehaconnect.org/clusters/water-and-sanitation-wash/>

⁸ Drinking-water. (2023, September 13). WHO. from <https://www.who.int/news-room/fact-sheets/detail/drinking-water>



linking their findings with field test kits (FTK). Waterborne diseases result from microbial and chemical contamination, with outbreaks primarily attributed to microbiological contamination. India reported 6,00,686⁹ cases of waterborne diseases.

Despite most drinking water supply programs in India focusing on quantitative aspects like coverage and the number of water facilities, water quality often receives¹⁰ insufficient attention. Comprehensive water quality management, encompassing drinking water, wastewater and sanitation treatment to reduce contaminant sources, is crucial for addressing health, well-being and environmental concerns. The challenge of water quality management is partly due to the lack of a comprehensive framework that allows the use of science to assist the policy of water quality management and translate the science into action.

The NJJM launched in 2019, aims to provide quality drinking water meeting BIS 10500 standards through functional household tap connections (FHTCs) to all rural households. Ensuring water quality through maintenance and surveillance is a critical aspect of NJJM.¹¹ A study by the World Health Organisation (WHO) and Department of Drinking Water and Sanitation (DDWS), Ministry of Jal Shakti (MoJS) estimates that to assess the possible health gains due to increased access to safely managed drinking water services in India, estimated that FHTCs could prevent nearly 400,000 diarrheal deaths by improving access to safely managed drinking water services.¹² Additionally, studies highlight significant microbiological contamination occurring between drinking water sources and the point of use¹³.

The Water Safety Plan (WSP) is a comprehensive risk management approach endorsed by WHO to ensure drinking water safety from catchment to consumer. Recognizing risks posed by climate variability and environmental changes, WHO developed the "Climate Resilient Water Safety Planning" framework in 2017. These risks affect human capacities to sustain safe water, influencing the water cycle and supply systems. These risks include human capabilities to sustain safe WASH practices.¹⁴ The risks affect the water cycle that can directly affect the water supply system.

⁹ These numbers were a response by the MOJS 31st of March 2022 to Lok Sabha question 411. The Waterborne diseases here are Acute Diarrheal Disease, Cholera, Viral Hepatitis-A,E and Leptospirosis

¹⁰ WaterAid. "Drinking water quality in rural India: issues and approaches." WASH Matters,

<https://washmatters.wateraid.org/publications/drinking-water-quality-in-rural-india-issues-and-approaches>.

Khambete, Aarti Kelkar, and India Water Portal. "Water policies in India: Past and present." India Water Portal, 11 September 2023,

<https://www.indiawaterportal.org/faqs/water-policies-india-past-and-present>.

¹¹ PIB. "Prime Minister releases Operational Guidelines for the implementation of Jal Jeevan Mission (JJM)." *PIB*, 25 December 2019, <https://pib.gov.in/newsite/PrintRelease.aspx?relid=196121>.

Estimating health gains from increased access to safely managed drinking water services following Government of India's Jal Jeevan Mission by WHO :

¹²<https://jaljeevanmission.gov.in/sites/default/files/2023-09/study-report-of-estimating-health-gains-from-increased-access-to-safely-managed-drinking-water%20services.pdf>

¹³ Wright, J., Gundry, S., & Conroy, R. (2004). Household drinking water in developing countries: a systematic review of microbiological contamination between source and point-of-use. *Tropical Medicine & International Health*, pp. 106-117.

¹⁴ WHO. (2017). Climate-resilient water safety plans.

https://apps.who.int/WSH/stories/WHO_guidance_for_climate-resilient_water_safety_plans_eng321632107.pdf



The Draft Rajasthan State Action Plan on Climate Change (RSAPCC)¹⁵, categorizes the State as “highly sensitive to climate change” and “lowest adaptive capacity”. Its effects can affect essential natural resources such as water, forests and biodiversity.

The Draft RSPACC 2022 indicates poorer groundwater quality as the levels go down, and the high dependence on the resource poses a higher risk. The Functionality Assessment for Rajasthan published by NJJM in 2022 states a higher dependence on groundwater (52%) than on surface water (5%), which indicates the need to think about source sustainability in the state.¹⁶

In response to these challenges, UNICEF Rajasthan and INREM Foundation conducted Water Safety Plan assessments in Dungarpur and Karauli districts, drawing on concepts of climate-resilient water safety planning and safe water communities. These assessments aimed to understand household water storage and handling practices within the NJJM framework, identifying gaps in safe water access post-FHTC implementation. Insights gained from earlier assessments informed a comprehensive assessment in Pratapgarh District.

Objective

The following are the objectives of this assessment:

- i. To understand the water handling and storage practices among the community and their impact on hygiene and sanitation practices.
- ii. To analyze the water quality and its consistency from source to point of use.
- iii. To understand potential risks to drinking water safety due to known and unknown effects of climate change.

Geography

Pratapgarh district is one of UNICEF's priority districts for the country plan 2023-27. UNICEF aims to strengthen the systems for the effective implementation of WASH flagships to achieve the intended targets under SDG 6.

Pratapgarh is situated in the southern part of Rajasthan, situated at the junction of Aravalli Ranges and the Malwa Plateau. The groundwater levels, as per Central Groundwater Board (CGWB) were between 2 to 5 meters below ground level (mbgl)¹⁷, both pre-monsoon and post-monsoon in 2022. Pratapgarh has a forest area coverage of 43%, the highest in the state.¹⁸ Pratapgarh holds the promise of identifying unique challenges and opportunities in

¹⁵https://environment.rajasthan.gov.in/content/dam/environment/Env/Pdf_Files/Draft%20of%20State%20Action%20Plan%20on%20Climate%20Change%202022.pdf

¹⁶ NJJM. (2022). *Functionality Assessment of Household Tap Connection under National Jal Jeevan Mission (JJM) - 2022*. Jal Jeevan Mission. <https://jaljeevanmission.gov.in/sites/default/files/2022-10/FA-State-Report-Rajasthan.pdf>

¹⁷ <https://www.cgwb.gov.in/cgwbpnm/public/uploads/documents/17080028291190663795file.pdf>

¹⁸ Highest percentage forest Area with regards to geographical area as per <https://forest.rajasthan.gov.in/content/raj/forest/en/resources/forest-statistics/general-introduction1/district-wise---forest-area-w-r-t--geographical-area.html>



water quality monitoring and surveillance. Pratapgarh district comprises 63.42 percent of tribal population.¹⁹

The district's water infrastructure has witnessed progress in tap connections with 3.54% (6017) households at the start of NJJM to 26.54% coverage as of 04.06.2024, according to the JJM Dashboard. During the time of assessment, the tap coverage was 21.32%. FHTC coverage in Pratapgarh is lower than the state's FHTC coverage, i.e., 49.49% as of 04.06.2024.

Two villages, each from two blocks with completed NJJM works, were chosen for the assessment. Panmodi and Gadola village from Pratapgarh block (as the district headquarter block) and Jaya Khera and Gadwas village from Dhariyawad Block (far from the district headquarter) were chosen.

Methodology

To understand access to safe water in Pratapgarh, checkpoints between the source and consumer end were examined. This established a correlation between drinking water quality, hygiene, and household-level storage and handling practices.

A mixed-method approach was used to understand the drinking water, relevant sanitation practices, and existing gaps among the communities in the selected geography.

1. Sanitary surveys using suggested formats from NJJM's WQMS Framework were conducted at functional drinking water sources of each village. Additionally, the household survey consisted of questions targeting the sanitary conditions around FHTCs at households.
2. Household Surveys of 20 randomly selected households with FHTCs from each village were conducted. A total of 80 households were surveyed for the assessment.
3. Chemical Testing (7 Parameters)²⁰ of the main drinking water sources of each village was done at the district laboratory. Additionally, samples from public institutions such as Anganwadi centres, Schools and Health centres found open during the assessment period were tested.
4. Microbial testing using H2S²¹ Vials was done at three points: the main drinking water source of each village, the FHTC of selected households, and the drinking water storage container of selected households. Samples from taps, institutions, and village-level drinking water sources with microbial contamination were retested.

¹⁹ Census of India. (2011). DISTRICT CENSUS HANDBOOK PRATAPGARH. Registrar General and Census Commissioner of India.

²⁰ The District PHED Laboratory at Pratapgarh conducts chemical water quality testing of 8 Parameters, namely - pH, Alkalinity, Hardness, Chloride, Nitrate, Fluoride, Dissolved Solids and Turbidity. Samples were not tested for Turbidity as turbidity testing is conducted during monsoon season, and this assessment was conducted in January - February 2024.. 7 Parameters were included in the chemical testing of this assessment.

²¹ H2S vials are used for indicative microbial testing of water. Discolouration of the sample indicates the possibility of contamination.



A capacity-building workshop on WSP was conducted to orient district PHED stakeholders on the methodology used for this assessment, aiding participants in better understanding and implementing the data collection process.

Sampling Strategy

For this assessment, a total of four villages have been selected from the two identified blocks.

Blocks were selected based on their proximity to the district headquarters. Pratapgarh was chosen because it is the headquarters block, while Dhariyawad, located 45 kilometers away, is the farthest block from the headquarters. From each block, two villages with completed NJJM work were included in the assessment. The rationale for the selection of the above-mentioned villages is a combination of the following two reasons:

- a. NJJM works are completed (or towards completion) in the selected villages, as shared by district PHED officials.
- b. These villages have the highest population amongst the NJJM works completed villages in the Block, therefore offering an indicative understanding of a larger population.

Following are the details of the selected villages (source: NJJM Dashboard):

Block	Name of Gram Panchayat	Name of Village	Number of Households	Number of FHTCs	% FHTC connections (on 04.12.23)	% FHTC connections (on 04.06.24)
Pratapgarh Block	Panmodi	Panmodi	457	410	89.72	100.00
	Gadola	Gadola	692	692	100.00	100.00
Dhariyawad Block	Gadwas	Gadwas	198	198	100.00	100.00
	Muniya	Jaya Khera	104	104	100.00	100.00

Points of Data collection

- a. Household survey: A total of 80 households were selected randomly from the 04 villages i.e. 20 from each village. The survey was conducted using Google Forms.
- b. H2S Testing: 80 water samples of drinking water storage containers from the households for microbial contamination using H2S Vials.
- c. FHTC tap water of the same 80 households using H2S vials.





- d. Samples from FHTC and a water storage container of one randomly selected household from three villages including Gadola, Gadwas and Jaya Khera for chemical water testing at PHED Laboratory.²²
- e. Sanitary surveys of 8 drinking water sources (NJJM water supply schemes).
- f. Tap connections and storage containers of public institutions like Schools, Anganwadi centers and Health centers were tested for chemical testing at the laboratory and bacteriological tests were done using H2S.
- g. Retesting of samples from taps, institutions and village level drinking water sources where microbial contamination was found using H2S vials were done, as mandated in WQMS Framework. Details of contamination found in drinking water containers at households were shared with PHED Pratapgarh to take necessary action by leveraging ISAs.

Sample collected at the villages for chemical water quality testing.



H2S vials used in the village for microbial water quality testing.

Following are the details of AWCs/Balwadis and schools in the selected villages:

Block	Gram Panchayat	Name of Village	No. of AWCs	No. of schools
Pratapgarh Block	Panmodi	Panmodi	3	1
	Gadola	Gadola	3	1
Dharyawad Block	Gadwas	Gadwas	1	1
	Muniya	Jaya Khera	1	1
Total			8	4

²² The results of the chemical water testing of one random household of Panmodi has not been incorporated in the assessment findings. The test results could not be obtained due to competing year-end priorities and internal changes in the administration of the district PHED lab.



Findings

Water handling and storage practices and its impact on hygiene and sanitation practices

The findings of the household survey comprise six areas: including demographic details of households, Water source-related information, FHTC placement & water testing , Container handling & water treatment, Health and Village information related to sanitation and hygiene practices.

The surveyed villages predominantly consist of households residing in plain terrain. The age range of respondents ranged between 19 to 65 years, with a higher number of male respondents. On average, households have approximately 5 to 6 members, with variations observed ranging from 2 to 11 members per household.

The survey conducted in four villages in Pratapgarh district reveals insights into various aspects of drinking water sources and usage patterns. Among 80 households of all 4 villages, 98.75% households rely on FHTCs as their primary water source. The 1.25% households not depending on FHTCs primarily belonged to Gadola village of Pratapgarh Block.

93.75% respondents indicated that they received FHTC water supply on the same day of the survey. Nonetheless, variability in supply duration was found, as 76.25 % of households receive water for less than an hour daily, and 23.75% receive it for 1-2 hours.

Despite FHTCs in the selected villages, 85% of households also use alternative water sources such as private borewells, handpumps, solar bore, open wells, and water tankers, especially when tap water is unavailable or insufficient. Out of the total users depending on alternative water sources, 95% responded that the unavailability of water supply through FHTC was a primary reason. The remaining 5% gave insufficient supply as their reason.

51.25% of the respondents use 1-2 pots for drinking and cooking purposes daily, whereas 45 % use 3-4 pots daily, and only 3.75 % use more than four pots. 16% of households mix alternate sources with tap water for household drinking water containers. The alternate sources include Handpump, Water Tanker users & Open Well users.



FHTC Pipe run through the drainage in Pandmodi Village



Presence of FHTC within 2 meter of drainage in Gadwas Village



FHTCs are placed outside the house (Gadwas Village)

The assessment found that 53.75% of FHTCs are placed outside the house, 31.25% at the entrance, and 15% of FHTCs are present inside the house, indicating the majority of the FHTCs are not placed inside the house premises.

Drainage has been found within 2 meters of FHTC in 41.25% of households and 25% of the households' FHTC pipes run through sewage drains. Additionally, 43.75% of households have toilets located within 10 meters of the FHTC. 38% of all the sample population with toilets within 10 meters of FHTC are from Pratapgarh block.



FHTCs are placed inside the house (Gadola Village)

It was found that 16% of households mix water from non-FHTC sources with tap water in household containers used for drinking water. Non-FHTC sources include handpumps, water tankers & open wells.

On water testing of FHTC connections, 21% of respondents reported seeing water testing conducted by ASHA workers, PHED officials, or five women groups. Out of these, 71% responded that testing took place within a month of the assessment.



FHTCs are placed at the entrance (Panmodi Village)

On information about water quality testing, 85% respondents shared that they are not aware of this however 6.25% households responded that the testing results were shared in the Gram Sabha, 8.75% said results were shared by Panchayat/PHED/VWSC representatives. 100% respondents expressed the desire to know about drinking water quality.

Almost all households i.e 97.5% keep their drinking water containers inside the premises. Similarly, 98.75 % of households placed the container on raised platforms. Additionally, it was found that 95% of households clean their containers every time before refilling them, while 5% clean the containers whenever they appear dirty.

55% of the total sampled households practice household-level traditional water filtration. Among them, the majority, accounting for 86.3 % of households, use cloth filtration, while 11 % of households boil water, and 2.2 % of households utilize domestic water filters. It's noteworthy that no households in Gadola of Pratapgarh Block practice any form of household water treatment process. Responses on use of ladles indicate that 75% of households do not even use a ladle.

In terms of health-related findings, there have been no reported cases of major waterborne diseases or epidemics in the recent past. Waterborne diseases considered in this



assessment were diarrhea, malaria, Jaundice, Cholera, Kidney Stones, Typhoid, and Hepatitis. However, 2.5% households (from Jayakhera and Gadola), reported the possibility of diarrhea in child under 5 age in the past three months. Additionally, there have been no reported cases of epidemics among respondents in the last five years (excluding Covid-19).

Information such as the presence of toilets in households as well as community-level toilets provides an understanding of sanitation and hygiene practices within the villages. 43.75% of respondents shared that there were no toilets in the premises. Regarding community toilets, 95% of households reported the absence of a community toilet in the village, while 2.5% have access, and another 2.5% are unsure about community toilet availability. On existing drainage systems, proper drainage channels were observed for 67.5% of respondents, and 1.25% of respondents had waste accumulation around FHTCs.

On Solid Waste Management, approximately 42.5% of households expressed a lack of a proper disposal system in the village, while 40% practice burning waste in open areas. Around 11% stated that waste accumulates in the village.

Awareness about and engagement with the Village Water and Sanitation Committee (VWSC) was found to be limited, with 80% of respondents are not aware of the Committee. 1.25% respondents have heard about them through the gram sabha.

The resolutions taken during the gram sabha related to water and sanitation. 62.5% of respondents shared that no such meetings had taken place; however, 30% of the respondents recalled attending such meetings, where topics such as tap connections, water testing, tank cleaning, bill payment, and awareness campaigns related to safe water and sanitation were discussed.²³

Water quality consistency from source to point of use

Microbial water quality testing via H2S test

Household Drinking Water Containers:

The testing identified potential microbial contamination in 10% household water containers across three villages; Gadola and Gadwas of Pratapgarh Block, and Jaya Khera of Dhariyawad Block. Discoloration, either black or brown, was observed in containers, indicating possible microbial growth.²⁴

Functional Household Tap Connections (FHTCs):

No microbial contamination was found in indicative samples collected from FHTCs during the time of assessment.

²³ Village wise finding attached in annexure 2

²⁴ Details of contamination found in drinking water containers at households were shared with PHED Pratapgarh to take necessary action by leveraging ISAs.



H2S Vials used for the assessment showing declaration

Public Institution Drinking Water Containers and FHTCs

The findings of the microbial water quality testing conducted at government institutions show discoloration of 25% of the samples. Drinking water containers of Anganwadi in Gadola village and FHTC of Anganwadi of Panmodi village were found to be potentially contaminated.^{25 26}

Main JJM Water Source

12.5% open well of Gadola village has shown discoloration after microbial water quality testing.²⁷²⁸

Chemical water quality testing²⁹

As mentioned in the sampling strategy section, chemical testing at the district PHED Laboratory was conducted for random households of each village³⁰, the main drinking water source according to JJM IMIS and government institutions. The chemical testing encompassed parameters such as pH, alkalinity, hardness, chloride, nitrate, fluoride, and dissolved solids in the water. The findings from this testing indicated that all collected samples, after analysis at the district PHED Lab, fell within the limits outlined by BIS 10500 standards.³¹



Fig: Capped openwell of Gadola



Fig: Un-capped openwell of Gadola

Sanitary Inspection

In Dhariyawad block, the tube-wells in Gadwas and Jaya Khera were found to have low contamination risks. These wells exhibited proper maintenance and minimal risk factors, except

²⁵ Retesting of samples from public institutions where microbial contamination was found using H2S vials were conducted by the district PHED Laboratory.

²⁶ Both villages of Dhariyawad Block did not have health centers. FHTC connection of the health center in Gadola was under construction and the health center in Panmodi was closed. Therefore analysis of water quality of health centers could not be done during the time-period of the assessment.

²⁷ Retesting of samples from public institutions where microbial contamination was found using H2S vials were conducted by the district PHED Laboratory.

²⁸ During the time of assessment, samples were collected from the source that were under use, which was not the same as the information available on JJM MIS.

²⁹ Detailed finding of the chemical water quality testing attached in annexure 4

³⁰ The results of the chemical water testing on one random household of Panmodi has not been incorporated in the assessment due to change in the administration of district PHED lab.

³¹ BIS. "BIS 10500 (2012): Drinking water." Central Pollution Control Board, 2012 https://cpcb.nic.in/wqm/BIS_Drinking_Water_Specification.pdf.



Fig: Tubewell from Jaya-Khera



Fig: Capped openwell of Panmodi

for the presence of an uncapped well within 100 meters in Jaya Khera. In the Pratapgarh block, the open wells in Panmodi and Gadola scored medium on the risk assessment, indicating moderate potential for contamination. Issues such as inadequate drainage channels and pollution sources within 30 metres were observed.

Variations observed between headquarter block and block farthest from the headquarter

The table below compares Pratapgarh and Dhariyawad blocks in terms of water supply, sanitation, and waste management. Pratapgarh is closer to the urban amenities and the district headquarter, shows better infrastructure compared to Dhariyawad, which is more rural and farther away from the district headquarter.

Factor	Pratapgarh	Dhariyawad
Drinking Water Source	All depend on FHTC in Pratapgarh Block	All except one household depends upon FHTC in Dhariyawad Block
Duration of Water Supply	All responded less than one hour of water supply daily	52.5% responded that the block gets less than one hour but remaining 47.5% receives water between 1-2 hours daily
Drainage Conditions around the Household FHTCs	40% responded that their is drainage within 2 meters of their household FHTC	22.5% responded that their is drainage within 2 meters of their household FHTC
	45% responded that FHTC pipe of their house runs through sewage in Pratapgarh Block	5% responded that FHTC pipe of their house runs through sewage in Dhariyawad Block
Presence of toilets in vicinity of FHTC	77.5% responded that their is toilet within 10 meter of FHTC	10% responded that their is toilet within 10 meter of FHTC
Drinking Water Treatment practices	25% uses Cloth Filtration	82.5 % uses traditional water filtration including boiling cloth filtration, and 0.25% uses Water Purifier
Waste Disposal Practices in Village	40% households lack proper waste disposal	45% households lack proper waste disposal
Drainage conditions in the village	Only 2.5% households report water accumulation	62.5% households lack proper drainage systems



Presence of Household Toilets in the village	12.5% households lack household toilets	77.5% households lack household toilets
Presence of Community Toilets in the village	90% households lack access to community toilets	All households lack access to community toilets
Waste Accumulation in the Village	Only 2.5% households report waste accumulation	22.5% households report waste accumulation

Despite Pratapgarrh being the headquarter block, significant concerns regarding the placement of FHTCs and proximity to sewage and toilet facilities were observed. In the rural block of Dhariyawad, sanitation infrastructure is notably deficient, with 77.5% of respondents lacking household toilets and no access to community facilities. Similarly, waste disposal and drainage systems in Dhariyawad are inadequate, with 45% per cent of respondents lacking proper waste disposal methods and 62.5% reporting poor drainage systems, leading to waste accumulation. In contrast, villages in the Pratapgarrh block exhibit relatively better waste disposal and drainage systems.

The higher contamination rates observed through microbial testing in Dhariyawad compared to Pratapgarrh suggest potential variations in water hygiene awareness, the use of safe storage containers, or other factors influencing sanitation practices between the two blocks.

Potential long term risks of climate change

Climate change poses a significant threat to drinking water safety, manifesting in both anticipated and unforeseen impacts. The assessment has identified various indirect factors that could influence water quality and sustainability in the surveyed regions. Households surveyed estimates that consumption of drinking water ranging from 1 to 4 pots daily, sourced from open wells, tube wells, and other local sources.

Additionally, the assessment reveals that 33% of the respondents' family members are children and 45.9% are female. These populations are particularly vulnerable to the challenges and issues mentioned in the findings related to water quality, infrastructure deficiencies, and behavioral gaps in water handling practices. The sustainability of these sources have the potential of being affected by extreme climate events.



Recommendations

The following recommendations are envisioned to address the gaps found through the assessments.

1. Gaps in household drinking water handling and storage practices were found in the assessment. Contextual Information, Education, and Communication (IEC) strategy for safe WASH practices on the importance of using ladles, adopting proper sanitation practices, and promoting community health can be developed and utilized at the village level. Water for People offers a range of ready-to-use IEC materials on topics such as Handwashing, Clean Water Sources, Safe Water Practices, Community Water Management, and Water Storage. These materials can be adapted in vernacular languages to serve as valuable resources for communicating safe practices tailored to local contexts and needs.
2. The findings of the assessment indicate the need to promote simple drinking water treatment methods and practices at the household level. The product guide on Household Level Water Treatment by UNICEF suggested that effective non-chemical household water treatment methods such as boiling and filtration can significantly contribute to safer water consumption practices. The product guide focuses on the water treatment options based on the size of the microbial contaminants and advises different methods based on the need.
3. Sanitary inspections conducted in the assessment indicated medium risk at the majority of main water sources. The NJJM's WQMS Framework instructs regular sanitary inspections of water sources by the concerned laboratory officials. The framework has a range of sanitary survey formats that can be used for different types of drinking water sources.
4. The findings related to VWSC indicate the need for its strengthening and activation. Four-tier frameworks, as mentioned in NJJM guidelines, intended to create an enabling environment for state, district and village-level institutions to facilitate the smooth implementation of NJJM. The DWSM is an important platform under the chairpersonship of respective District Collectors to enable district level interdepartmental convergence. Strengthening this body will enhance the functioning of VWSCs. The WQMS framework advocates for community participation in the operation and maintenance of in-village water supply infrastructure. 'Community Ownership of Water Supply by NJJM emphasizes the importance of community participation through institutions like the VWSC to drive local initiatives for water and sanitation, fostering a sense of ownership and responsibility.
5. The assessment indicated possible correlations between waterborne diseases and drinking water storage and handling practices. Framework developed by WHO & UNICEF titled 'Integrated Global Action Plan for the Prevention and Control of Pneumonia and Diarrhea (GAPPD)' sets forth key interventions proven to effectively



protect children's health, prevent disease and appropriately treat children who do fall ill with diarrhea. Additionally, capacity building of local rural institutions such as Anganwadi workers and Schools on topics like safe WASH practices and adequate nutrition for children's is recommended. Involving stakeholders such as ASHA workers, community health officers, and other relevant frontline in the aforementioned initiatives will help in the implementation of the interventions to promote rural water safety in institutions and households.

Conclusion

The assessment findings reveal that Functional Household Tap Connections (FHTCs) are present in all surveyed households, highlighting the need for enhanced and continuous water quality surveillance and monitoring mechanisms. Sanitation gaps within the water supply infrastructure, particularly concerning the sanitary and drainage conditions of FHTCs, along with behavioral gaps in water storage and handling practices, pose risks of water quality contamination. The survey also identifies limitations in waste management infrastructure across villages. Microbial and chemical testing conducted as part of the assessment shows variation between blocks, with Dhariyawad, situated farther from the district headquarters, facing higher potential risks to household water quality. In Pratapgarh Block, instances of drinking water discoloration were observed in government institutions.

The development and implementation of water safety planning are strongly recommended to comprehensively address the water quality situation in the region. The report also provides actionable solutions, including promoting household water treatment methods, implementing effective IEC strategies, enhancing sanitation facilities, and strengthening community engagement through VWSCs. These measures aim to address the identified gaps and improve overall water quality, sanitation, and health outcomes in Pratapgarh district.

The report provides insights into current water quality management practices and outlines actionable recommendations to mitigate risks and ensure access to safe water for the communities in Pratapgarh.

Annexures

Annexure 1 - Household Survey Format

Annexure 1.1

Understanding safe water access in Pratapgarh District

Assessment Tools

Type of Data to be collected:

1. Household Survey
2. Sanitary Survey (for handpump and CWRs)

1. Household Questionnaire:

Particulars	Response																															
Section 1: Basic Information																																
Village																																
Type of terrain	<ul style="list-style-type: none"> • Hilly 																															
	<ul style="list-style-type: none"> • Plain 																															
	<ul style="list-style-type: none"> • Dessert 																															
	<ul style="list-style-type: none"> • Others, please specify _____ 																															
Name of respondent																																
Gender																																
Age of Respondent																																
Number of members in the household	<table border="1"> <thead> <tr> <th colspan="2">Total members</th> <th colspan="2">Under 5 years</th> <th colspan="2">6-12 years</th> <th colspan="2">12-18 years</th> <th colspan="2">18 and above</th> </tr> <tr> <th>M</th> <th>F</th> <th>M</th> <th>F</th> <th>M</th> <th>F</th> <th>M</th> <th>F</th> <th>M</th> <th>F</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Total members		Under 5 years		6-12 years		12-18 years		18 and above		M	F	M	F	M	F	M	F	M	F											
	Total members		Under 5 years		6-12 years		12-18 years		18 and above																							
	M	F	M	F	M	F	M	F	M	F																						
Section 2: Water source related information																																
What is the main source of drinking water?	<ul style="list-style-type: none"> • FHTC 																															
	<ul style="list-style-type: none"> • Handpump 																															
	<ul style="list-style-type: none"> • Private Borewell 																															
	<ul style="list-style-type: none"> • Other _____ 																															
When was the last time tap supply was received at home?	<ul style="list-style-type: none"> • Yesterday 																															
	<ul style="list-style-type: none"> • This week 																															



	<ul style="list-style-type: none"> • Last week
	<ul style="list-style-type: none"> • More than 10 days back
Alternate source of drinking water?	<ul style="list-style-type: none"> • Hand pump
	<ul style="list-style-type: none"> • Private borewell
	<ul style="list-style-type: none"> • Spring
	<ul style="list-style-type: none"> • Tanker
	<ul style="list-style-type: none"> • Others_____
When do you rely on alternate drinking water sources?	<ul style="list-style-type: none"> • When no water supply in tap
	<ul style="list-style-type: none"> • When insufficient supply in tap/primary water source
	<ul style="list-style-type: none"> • When water is dirty in the tap
	<ul style="list-style-type: none"> • When tap/pipeline is broken
	<ul style="list-style-type: none"> • Due to drought/flood
How much water does the household consume for drinking and cooking purposes daily?	<ul style="list-style-type: none"> • 1-2 earthen pots(Mataka)
	<ul style="list-style-type: none"> • 3-4 earthen pots(Mataka)
	<ul style="list-style-type: none"> • More than 4 pots(Mataka)
Is the water in your pot mixed with water from any other source?	<ul style="list-style-type: none"> • Yes • No
If mixed with tap water, which is the other source?	<ul style="list-style-type: none"> • Hand pump • Private borewell • Spring • Tanker • Others_____
How often do you do this?	<ul style="list-style-type: none"> • Daily, • Almost Never, • Once a week, • twice or thrice a week, • Other Option
Section 3: FHTC related information	
Where is the FHTC?	<ul style="list-style-type: none"> • Inside the house
	<ul style="list-style-type: none"> • At the entrance
	<ul style="list-style-type: none"> • Outside the house
Is there a drain/sewerage near the FHTC? (within 2 metres of source)	<ul style="list-style-type: none"> • Yes
	<ul style="list-style-type: none"> • No



Is the FHTC pipe running through a sewage drain?	• Yes
	• No
Is there a toilet in the vicinity of the FHTC? (within 10 meters of the toilet)	• Yes
	• No
Click a photograph of FHTC with geolocation	
Section 4: Water Quality testing related information	
Have you seen water testing being done in the village?	• Yes
	• No
Who did the testing?	• By ASHA worker
	• By hand pump Mechanic
	• By PHED official
	• By Panchayat Secretary/Sarpanch
	• By trained FTK user/5 women group
	• Others
When was the last time water quality testing was done in the village?	• Within a month
	• 3 months back
	• 6 months back
	• 1 year back
	• 3 years back
	• Don't remember
What happens if contamination is found?	• Results are shared during Gram Sabha
	• Results are presented on the notice board of Panchayat/other institution
	• Through Whatsapp
	• Through Panchayat/PHED/VWSC Representative
	• We don't get to know
If water is found contaminated, is retesting done?	• Yes
	• No
	• Don't know
Would you want water quality data to	• Yes



be shared with you?	<ul style="list-style-type: none"> No
Section 5: Water Safety : Perception and Practices	
Do you think the water is safe for drinking?	<ul style="list-style-type: none"> Yes
	<ul style="list-style-type: none"> No
If not, why?	
Do you practise any household level water treatment?	<ul style="list-style-type: none"> Yes
	<ul style="list-style-type: none"> No
If yes, what do you do?	<ul style="list-style-type: none"> Boiling
	<ul style="list-style-type: none"> Use a cloth to filter water
	<ul style="list-style-type: none"> Domestic water Purifier
	<ul style="list-style-type: none"> Other _____
Where is the storage container/pot kept 1	<ul style="list-style-type: none"> Inside the house
	<ul style="list-style-type: none"> Outside the house
Where is the storage container/pot kept 2	<ul style="list-style-type: none"> On the floor
	<ul style="list-style-type: none"> On a raised platform
	<ul style="list-style-type: none"> Others _____
How often do you clean the storage container?	<ul style="list-style-type: none"> When it gets dirty
	<ul style="list-style-type: none"> Before filling water
	<ul style="list-style-type: none"> Once a week
	<ul style="list-style-type: none"> Others _____
Do you use a ladle to draw water?	<ul style="list-style-type: none"> Yes
	<ul style="list-style-type: none"> No
	<ul style="list-style-type: none"> Sometimes
Section 6: Health related data	
Has any family member suffered from the following diseases in the last three months?	<ul style="list-style-type: none"> Diarrhea
	<ul style="list-style-type: none"> Jaundice
	<ul style="list-style-type: none"> Cholera
	<ul style="list-style-type: none"> Malaria
	<ul style="list-style-type: none"> Kidney stones



	<ul style="list-style-type: none"> • Typhoid
	<ul style="list-style-type: none"> • Hepatitis
	<ul style="list-style-type: none"> • No one fell sick
Did any children under 5 suffer from diarrhoea in the past 3 months?	<ul style="list-style-type: none"> • Yes
	<ul style="list-style-type: none"> • No
	<ul style="list-style-type: none"> • Maybe
Has there been an epidemic in the past 5 years?	<ul style="list-style-type: none"> • Yes
	<ul style="list-style-type: none"> • No
	<ul style="list-style-type: none"> • Maybe
Section : General information of the village (Sanitation, hygiene and institutions)	
Is the toilet in use within the premises?	<ul style="list-style-type: none"> • Yes
	<ul style="list-style-type: none"> • Not by everyone
	<ul style="list-style-type: none"> • During dark
	<ul style="list-style-type: none"> • No toilet in the premise
Is there a community toilet in the village?	<ul style="list-style-type: none"> • Yes
	<ul style="list-style-type: none"> • No
How is dirty water disposed of in the village?	<ul style="list-style-type: none"> • There are drains and soak pits in the village
	<ul style="list-style-type: none"> • There are drains but,water is getting accumulated around taps, pipelines and handpumps
	<ul style="list-style-type: none"> • No proper drainage system in the village
How is waste disposed of in the village?	<ul style="list-style-type: none"> • Waste is disposed of at home only, by burning.
	<ul style="list-style-type: none"> • Waste is burnt in open areas in the village
	<ul style="list-style-type: none"> • There is waste accumulated in certain areas of the village
	<ul style="list-style-type: none"> • There is not proper waste disposal system in the village
	<ul style="list-style-type: none"> • By other ways _____
Do you know about the Village Water and Sanitation Committee (VWSC)?	<ul style="list-style-type: none"> • Yes
	<ul style="list-style-type: none"> • No
	<ul style="list-style-type: none"> • Have heard of them in Gram Sabhas
Have there been meetings/resolutions taken during	<ul style="list-style-type: none"> • About water tap connections



gram sabha related to water and sanitation?	<ul style="list-style-type: none"> About water testing
	<ul style="list-style-type: none"> About water tank cleaning, payment of bills etc.
	<ul style="list-style-type: none"> Safe water and sanitation related awareness campaigns
	<ul style="list-style-type: none"> Other

Annexure 1.2

Sanitary Inspection Form for Borehole with Hand pump (to be done if the household does not have tap connection)

Basic Information:

- Name of village
- Date of inspection
- Tested with H2S Vial?
- H2S Vial number:
- Photograph of source with geolocation

Sanitary survey:

- Is there a latrine WITHIN 10m of the borehole? (Y/N)
- Is there a latrine uphill of the borehole? Y/N
- Are there any other sources of pollution (animal breeding, cultivation, roads, industry etc) within 10m of the borehole? Y/N
- Is the drainage faulty allowing ponding within 2 m of the borehole? Y/N
- Is the drainage channel cracked, broken or need cleaning? Y/N
- Is the fence missing or faulty? Y/N
- Is the apron less than 1m in radius? Y/N
- Does spilt water collect in the apron area? Y/N
- Is the apron cracked or damaged? Y/N
- Is the handpump loose at the point of attachment to the apron? Y/N

Total score of risks/ 10

(Risk score: 9-10 = Very high; 6-8 = High; 3-5 = Medium; 0-3 = Low)

Annexure 1.1

Sanitary inspection form for piped water with service reservoir (for households with tap connection)

Basic Information:

- Name of village
- Date of inspection
- Date of disinfection
- Source: Groundwater or surface water
- Tested with H2S Vial?
- H2S Vial number:
- Photograph of source with geolocation

Sanitary survey:

- Is there a latrine or sewer within 30m of the dugwell? (Yes - Risk ↑/ No - Risk ↓)
- Is the wall of the well lined properly and the well covered adequately? (Yes - Risk ↓/ No - Risk ↑)
- Is open defecation prevalent or cattle-dung found within 50 m ? (Yes - Risk ↑/ No - Risk ↓)
- Is the well used for bathing and washing of clothes? (Yes - Risk ↑/ No - Risk ↓)
- Is there any water drainage facility available around the platform of the well? (Yes - Risk ↓/ No - Risk ↑)
- Does the water of the well appear visibly clean? (Yes - Risk ↓/ No - Risk ↑)
- Does the drainage facility lead to water stagnation within 30 m of the wall? (Yes - Risk ↑/ No - Risk ↓)
- Is there any other source of pollution within 10 m of the well? (Yes - Risk ↑/ No - Risk ↓)
- Was the well chlorinated during the last 7 days? (Yes - Risk ↓/ No - Risk ↑)
- Does the pipe from the open well to the water tank look sturdy and with no leakage? (Yes - Risk ↓/ No - Risk ↑)



Total score of risks/10

(Risk score: 10-12 = Very high; 9-10 = High; 6-8 = Medium; 3-5 = Low 0-2 = Very Low)

Annexure 2 - Monitoring Reports

Annexure 2.1

Monitoring Report - Household Survey

Panmodi Household Survey Analysis - Preliminary Analysis

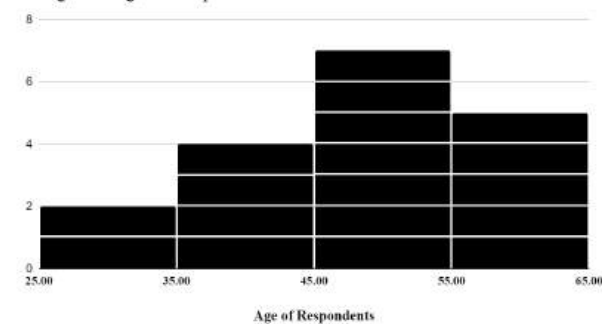
A. Respondent Demographic and Household Characteristics

1. **Type of Terrain** : All houses resides in Plain Terrain

2. Respondent Demographics:

- Male to Female Ratio : 19M / 1F
- Age Range : 25 to 65 Years

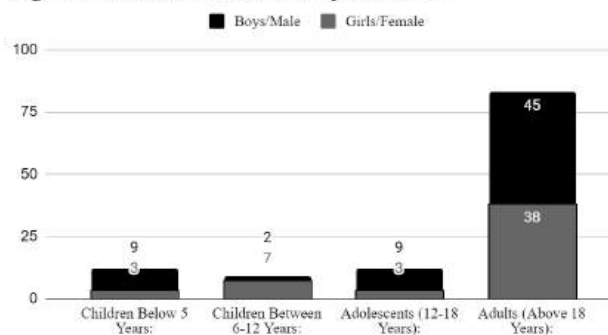
Histogram- Age of Respondents



3. Household Information:

- Total Number of Members in 20 Households : 116 Members
- Average Number of Members in 20 Households : 5.8 Members
- Range of Members per Household : 3 to 11 Members

Age Wise Distribution of Family Members



B. Source Related

1. All the households responded that the main source of water is FHTC-Tap Connection.
2. The collected response suggests a recent and regular supply of tap water. The tap water supply status alternates between Yesterday and Today. The most entry indicates that tap water supply was received Today.

Regularity of Tap Supply Availability	Yesterday	Today
	1	19



3. Water Supply Duration:
 - Less than 1 hour : 20 respondents
4. Alternative Water Sources:
 - Water Tanker : 8 Households
5. Reasons for Using Alternate Source:
 - 7 Respondents rely on alternate sources only when tap water is unavailable.
 - One respondent relies on alternate sources when there is insufficient supply from the tap.
6. Daily Water Consumption for Drinking and Cooking:
 - 1-2 pots : 11 households
 - 3-4 pots : 8 households
 - More than 4 pots : 1 household
7. Dependency on Alternate Source for Household containers:
 - Total Households Using Alternate Source : 2 Households
 - Water Tanker : 2 Households
8. Frequency of Alternate Source Usage:
 - Twice a Month : 5 Households
 - Thrice a Month : 5 Households

C. FHTC (Functional Household Tap Connection) and Water Quality:

1. Placement of FHTC in Household:
 - Inside the house : 2 Households
 - At the entrance : 11 Households
 - Outside the house : 7 Households
2. FHTC Pipe and Sewage Drain:
 - a. Out of 20; 15 households have drainage within 2 meters of the FHTC.
 - b. 12 houses have FHTC pipes running through sewage drains.
3. Proximity of Toilet to FHTC :
 - Out of 20; 15 households have a toilet within 10 meters of the FHTC.
4. Booster or Motor Installation:
 - No household has installed a booster or motor from the tap connection.
5. Water Testing in the Village:
 - Seen water testing in the village : 3 out of 20 households
 - By ASHA workers : All 3 households
6. Frequency of Water Testing as per respondent:
 - One year months back : 2 households
 - No water quality testing : 18 households
7. Response on finding out about the water contamination:
 - Respondent Don't know : All 20 households
8. Retesting after water is found Contaminated:
 - Respondent Don't know : All 20 households
9. All respondents want the results of water quality data to be shared with them.
10. Except one, all other 19 respondents would like drinking water testing done in their village on a regular basis.
11. Perception of Water Safety: All respondents believe that water is safe for drinking.



D. Container Handling and Water Treatment Practices:

1. **Placement of Containers:**
 - Inside the Premise : 20 Households
2. 19 respondents keep the container on a raised platform whereas one keeps it on the floor.
3. **Container Cleaning Frequency:**
 - Every time before filling water : 20 Households
4. **Ladle Usage:**
 - Do not use a ladle : 18 Households
 - Use a ladle : 2 Households
5. **Household Water Treatment Practices:**
 - Cloth filtration : 10 respondents

E. Health Related Information:

1. **Family Members' Health in the Last 3 Months:**
 - No cases reported of Diarrhea, Malaria, Jaundice, Cholera, Kidney Stones, Typhoid, and Hepatitis.
2. **Diarrhea cases in children under the age of 5 :**
 - **All households** responded that **none** of the children under 5 suffered from diarrhea in the past 3 months.
3. **Epidemics in the Last Five Years(excluding COVID-19):**
 - **No reported cases** of epidemics among respondents in the last five years.

F. General information of the village (Sanitation, hygiene and institutions):

1. **Toilet Facilities:**
 - Inside Premises : 16 Toilets
 - No Toilet Inside Premises : 4 Toilets
2. **Community Toilets:**
 - **18 households** responded; there is **no community toilet** in the village.
 - **1 responded**; there is a **community toilet** in the village.
 - **1 responded**; they **don't know** if there is a community toilet in the village.
3. **Drainage System:**
 - Drainage System Available in the village : 20 Households Response
4. How is waste disposed of in the village?

Number of Respondents	Responses
10 Households	Waste is burnt in open areas in the village
10 Households	There is no proper waste disposal system in the village

5. **Awareness of Village Water and Sanitation Committee (VWSC):**
 - Don't Know : 18 Households
 - Know about VWSC : 2 Households
6. All responded that **there have been no meetings/resolutions** taken during gram sabha related to water and sanitation?

Gadola Household Survey Analysis - Preliminary Analysis

A. Respondent Demographic and Household Characteristics

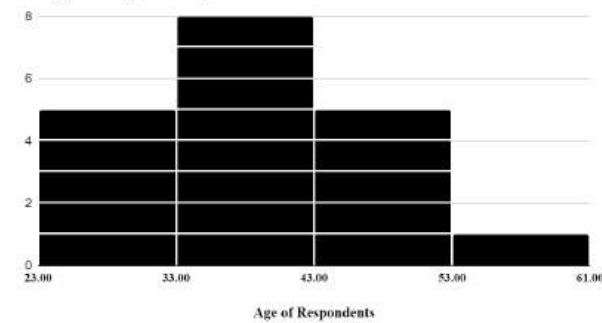
1. **Type of Terrain** : All houses resides in Plain Terrain



2. Respondent Demographics:

- Male to Female Ratio : 16M / 4F
- Age Range : 23 to 61 Years

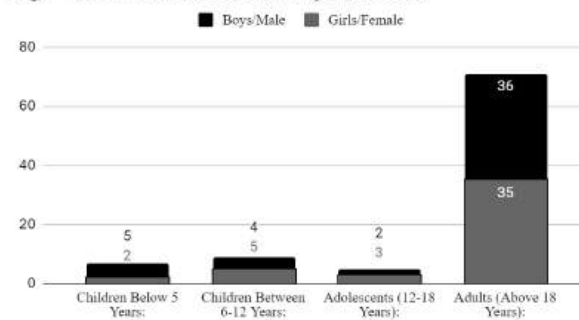
Histogram- Age of Respondents



3. Household Information:

- Total Number of Members in 20 Households : 92 Members
- Average Number of Members in 20 Households : 4.6 Members
- Range of Members per Household : 2 to 8 Members

Age Wise Distribution of Family Members



B. Source Related

1. 19 households responded that the main source of water is FHTC–Tap Connection whereas one said open-well.
2. The collected response suggests a recent and regular supply of tap water. All respondents mentioned that they received FHTC on the **same day** of data collection.
3. Water Supply Duration:
 - **All Responded** - Less then one hour
4. Alternative Water Sources:
 - Solar Bore : 1 Household
 - Open Well : 1 Household
 - Tankers : 6 Households
 - Nearest Handpumps : 12 Households
5. Reasons for Using Alternate Source:
 - 19 Respondents rely on alternate sources only when tap water is unavailable.
 - One respondent does not rely on any alternate source.
6. Daily Water Consumption for Drinking and Cooking:
 - 1-2 Pots : 10 households
 - 3-4 Pots : 9 households
 - More than 4 Pots : 1 Household
7. Dependency on Alternate Source for household container:
 - Total Households Using Alternate Source : 3 Households
 - Water Tanker : 2 Households



- Open Well : 1 Households

8. Frequency of Alternate Source Usage:

- Once a week : 1 Households
- Daily : 1 Households
- Once in 2 Months : 1 Households

C. FHTC (Functional Household Tap Connection) and Water Quality:

1. Placement of FHTC in Household:

- At the entrance : 6 Households
- Outside the house : 4 Households
- Inside the House : 10 Households

2. FHTC Pipe and Sewage Drain:

- a. Out of 20; 9 households have drainage within 2 meters of the FHTC.
- b. Out of 20; 6 households have FHTC pipes running through sewage drains.

3. Proximity of Toilet to FHTC:

- Out of 20; 16 households have a toilet within 10 meters of the FHTC.

4. Booster or Motor Installation:

- 2 households have installed a booster or motor from the tap connection.

5. Water Testing in the Village:

- Seen water testing in the village: 2 out of 20 households
 - By 5 Women group: 2 households

6. Frequency of Water Testing as per respondent:

- No water quality testing: 20 households

7. Response on finding out about the water contamination:

- Shared in Gram Sabha: 1 respondent
- We don't get to know: 19 respondents

8. Retesting after water is found Contaminated:

- Yes, retesting is done : 1 households
- Don't know : 16 households
- No retesting : 3 households

9. All respondents want the results of water quality data to be shared with them.

10. All respondents would like drinking water testing done in their village on a regular basis.

11. Perception of Water Safety: Except one all 19 respondents believe that water is safe for drinking.

D. Container Handling and Water Treatment Practices:

1. Placement of Containers:

- Inside the Premise : 20 Households

2. All respondent keeps the container on a raised platform

3. Container Cleaning Frequency:

- Every time before filling water : 20 Households

4. Ladle Usage:

- Do not use a ladle : 20 Households

5. Household Water Treatment Practices: All 20 responded they do not practice any kind of household water treatment process.

E. Health Related Information:



1. Family Members' Health in the Last 3 Months:
 - No cases reported of Diarrhea, Malaria, Jaundice, Cholera, Kidney Stones, Typhoid, and Hepatitis.
2. Diarrhea cases in children under the age of 5 :
 - **19 households** responded that **none** of the children under 5 suffered from diarrhea in the past 3 months.
 - **One household** reported a **possibility** of diarrhea in a child under 5 in the past 3 months.
3. **Epidemics in the Last Five Years**(excluding COVID-19):
 - **No reported cases** of epidemics among respondents in the last five years.

F. General information of the village (Sanitation, hygiene and institutions):

1. Household Toilet Facilities:
 - Inside Premises : **20 Households**
2. Community Toilets:
 - **18 households** responded; there is **no community toilet** in the village.
 - **1 responded**; there is a **community toilet** in the village.
 - **1 responded**; they **don't know** if there is a community toilet in the village.
3. Drainage System:
 - Drainage System Available in the village : **19 Households**
 - There are drains but,water is getting accumulated around taps, pipelines and handpumps : **1 Households**
4. How is waste disposed of in the village?

Number of Respondents	Responses
14 Households	Waste is burnt in open areas in the village
6 Households	There is no proper waste disposal system in the village

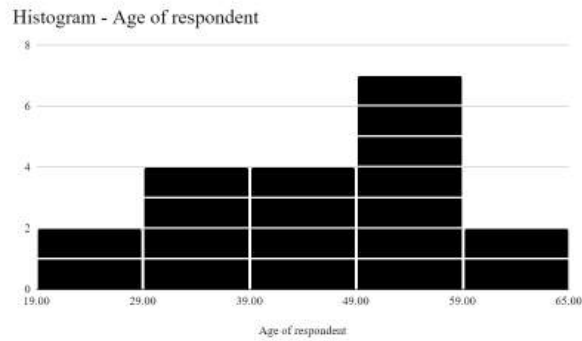
5. Awareness of Village Water and Sanitation Committee (VWSC):
 - Don't Know : **19 Households**
 - Know about VWSC : **1 Households**
6. Have there been meetings/resolutions taken during gram sabha related to water and sanitation?

Number of Households	Responses
19	No
1	About water tap connections

Gadwas Household Survey Analysis - Preliminary Analysis

A. Respondent Demographic and Household Characteristics

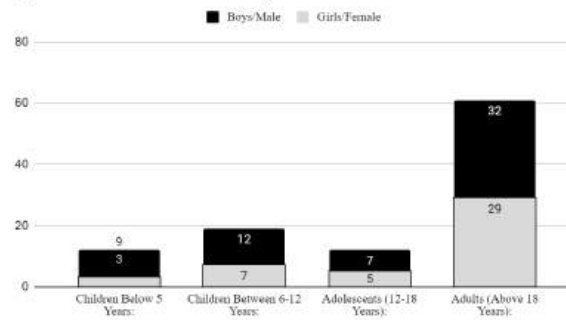
1. Type of Terrain : **All houses resides in Plain Terrain**
2. Respondent Demographics:
 - Male to Female Ratio : **All Male**
 - Age Range : **19 to 65 Years**



3. Household Information:

- Total Number of Members in 20 Households : **103 Members**
- Average Number of Members in 20 Households : **5.15 Members**
- Range of Members per Household : **2 to 10 Members**

Age Wise Distribution of Family Members



B. Source Related

1. **All the households** responded that the **main source of water is FHTC-Tap Connection.**
2. The collected response suggests a recent and regular supply of tap water. All respondents mentioned that they received FHTC on the same day of data collection.
3. Water Supply Duration:
 - Less than 1 hour : **13 respondents**
 - 1-2 hours : **7 respondents**
4. Alternative Water Sources:
 - Private Borewells : **7 Households**
 - Nearest Handpumps : **13 Households**
5. Reasons for Using Alternate Source:
 - All respondents rely on alternate sources only when tap water is unavailable.
 -
6. Daily Water Consumption for Drinking and Cooking:
 - 1-2 pots : **9 households**
 - 3-4 pots : **10 households**
 - More than 4 pots : **1 household**
7. Dependency on Alternate Source for household container:
 - Total Households Using Alternate Source : **2 Households**
 - Handpump Users : **1 Households**
 - Borewell Users : **1 Households**
8. Frequency of Alternate Source Usage:
 - Once a week : **1 Households**

- Twice or thrice a week : 1 Households

C. FHTC (Functional Household Tap Connection) and Water Quality:

1. Placement of FHTC in Household:

- At the entrance : 1 Households
- Outside the house : 19 Households

2. FHTC Pipe and Sewage Drain:

- Out of 20, **8 households** have drainage within 2 metres of the FHTC and Only 2 households said their FHTC pipe runs through the sewage.

3. Proximity of Toilet to FHTC:

- Out of 20, **Two households** have a toilet within 10 metres of the FHTC.

4. Booster or Motor Installation:

- **No household** has installed a booster or motor from the tap connection.

5. Water Testing in the Village:

- Seen water testing in the village: **4 out of 20 households**
 - By 5 Women group: **1 households**
 - By PHED officials: **3 households**

6. Frequency of Water Testing as per respondent::

- Within a month: **4 households**
- No water quality testing: **16 households**

7. Response on finding out about the water contamination:

- Shared in Gram Sabha: **3 respondent**
- Through Panchayat/PHED/VWSC Representative: **1 respondents**
- We don't get to know: **16 respondents**

8. Retesting after water is found Contaminated:

- Yes, retesting is done : **9 households**
- Don't know : **2 households**
- No retesting : **9 households**

9. **All respondents** want the results of water quality data to be **shared** with them.

10. **All respondents** would like drinking water testing done in their village **on a regular basis**.

11. **Perception of Water Safety:** All respondents believe that water is safe for drinking.

D. Container Handling and Water Treatment Practices:

1. Placement of Containers:

- Inside the Premise : **20 Households**

2. All respondent keeps the container on a raised platform

3. Container Cleaning Frequency:

- Clean whenever it gets dirty : **2 Households**
- Every time before filling water : **18 Households**



4. Ladle Usage:
 - Do not use a ladle : 9 Households
 - Use a ladle : 10 Households
 - Sometimes use a ladle : 1 Households
5. Household Water Treatment Practices:
 - Household level water treatment : 17 respondents
 - Boiling water : 3 respondents
 - Cloth filtration : 14 respondents

E. Health Related Information:

1. Family Members' Health in the Last 3 Months:
 - No cases reported of Diarrhoea, Malaria, Jaundice, Cholera, Kidney Stones, Typhoid, and Hepatitis.
2. Diarrhoea cases in children under the age of 5 :
 - All responded that none of the children under 5 suffered from diarrhoea in the past 3 months.
3. Epidemics in the Last Five Years(excluding COVID-19):
 - No reported cases of epidemics among respondents in the last five years.

F. General information of the village (Sanitation, hygiene and institutions):

1. Toilet Facilities:
 - Inside Premises : 6 Toilets
 - No Toilet Inside Premises : 14 Toilets
2. All the households responded; there is no community toilet in the village.
3. Drainage System:
 - Drainage System Available in the village : 14 Households Response
 - No Proper Drainage System : 6 Households Response
4. How is waste disposed of in the village?

Number of Responded	Responses
2 Households	Waste is burnt in open areas in the village
8 Households	There is no proper waste disposal system in the village
8 Households	There is waste accumulated in certain areas of the village
1 Households	There are dustbins and collection vehicles for proper disposal of waste
1 Households	Waste is disposed of at home only, by burning

5. Awareness of Village Water and Sanitation Committee (VWSC):
 - Don't Know : 16 Households
 - Know about VWSC : 4 Households
6. Have there been meetings/resolutions taken during gram sabha related to water and sanitation?

Number of Households	Responses
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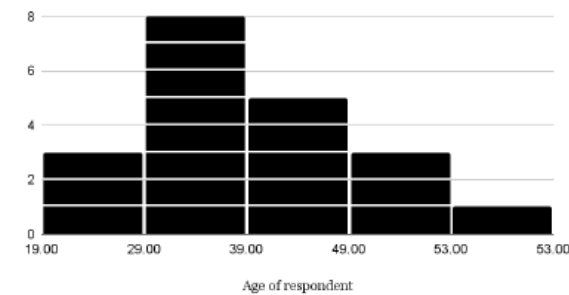
8	No
2	About water testing
4	About water tank cleaning, payment of bills etc.
6	Safe water and sanitation related awareness campaigns

Jaya Khara Household Survey Analysis - Preliminary Analysis

A. Respondent Demographic and Household Characteristics

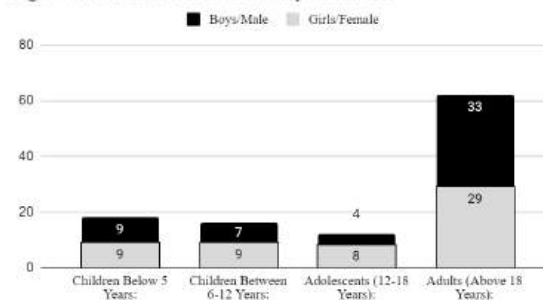
- Type of Terrain** : All houses resides in Plain Terrain
- Respondent Demographics** :
 - Male to Female Ratio : 13M / 7F
 - Age Range : 19 to 53 Years

Histogram - Age of respondent



- Household Information:**
 - Total Number of Members in 20 Households : 113 Members
 - Average Number of Members in 20 Households : 6 Members
 - Range of Members per Household : 3 to 10 Members

Age Wise Distribution of Family Members



B. Source Related

- All the households responded that the main source of water is FHTC-Tap Connection.
- The collected response suggests a recent and regular supply of tap water. The tap water supply status alternates between Yesterday and Today. The most entry indicates that tap water supply was received Today.

Regularity of Tap Supply Availability	Yesterday	Today
---------------------------------------	-----------	-------



	4	16
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3. Water Supply Duration:
 - Less than 1 hour : 8 respondents
 - 1-2 hours : 12 respondents
4. Alternative Water Sources:
 - Private Borewells : 5 Households
 - Nearest Handpumps : 15 Households
5. Reasons for Using Alternate Source:
 - 19 Respondents rely on alternate sources only when tap water is unavailable.
 - One respondent relies on alternate sources when there is insufficient supply from the tap.
6. Daily Water Consumption for Drinking and Cooking:
 - 1-2 pots : 11 households
 - 3-4 pots : 9 households
7. Dependency on Alternate Source for Household container:
 - Total Households Using Alternate Source : 4 Households
 - Handpump Users : 3 Households
 - Borewell Users : 1 Households
8. Frequency of Alternate Source Usage:
 - Once a week : 3 Households
 - Twice or thrice a week : 1 Households

C. FHTC (Functional Household Tap Connection) and Water Quality:

1. Placement of FHTC in Household:
 - At the entrance : 7 Households
 - Outside the house : 13 Households
2. FHTC Pipe and Sewage Drain:

Out of 20, **Only one household** has drainage within 2 metres of the FHTC and **No household said their FHTC pipes run through sewage drains.**
3. Proximity of Toilet to FHTC:
 - Out of 20, **Two households** have a toilet within 10 metres of the FHTC.
4. Booster or Motor Installation:
 - **No household** has installed a booster or motor from the tap connection.
5. Water Testing in the Village:
 - Seen water testing in the village: **8 out of 20 households**
 - By ASHA workers: **2 households**
 - By PHED officials: **6 households**
6. Frequency of Water Testing as per respondent:
 - Within a month: **4 households**
 - 3 months back: **4 households**
 - No water quality testing: **12 households**
7. Response on finding out about the water contamination:
 - Shared in Gram Sabha: **1 respondent**
 - Through Panchayat/PHED/VWSC Representative: **6 respondents**
 - We don't get to know: **13 respondents**
8. Retesting after water is found Contaminated:



- Yes, retesting is done : 10 households
- Don't know : 7 households
- No retesting : 3 households

9. All respondents want the results of water quality data to be shared with them.

10. All respondents would like drinking water testing done in their village on a regular basis.

11. Perception of Water Safety: All respondents believe that water is safe for drinking.

D. Container Handling and Water Treatment Practices:

1. Placement of Containers:

- Inside the Premise : 18 Households
- Outside the Premise : 2 Households

2. All respondent keeps the container on a raised platform

3. Container Cleaning Frequency:

- Clean whenever it gets dirty : 2 Households
- Every time before filling water : 18 Households

4. Ladle Usage:

- Do not use a ladle : 13 Households
- Use a ladle : 4 Households
- Sometimes use a ladle : 3 Households

5. Household Water Treatment Practices:

- Household level water treatment : 17 respondents
 - Water purifier(non-traditional) usage : 1 respondent
 - Boiling water : 2 respondents
 - Cloth filtration : 14 respondents

E. Health Related Information:

1. Family Members' Health in the Last 3 Months:

- No cases reported of Diarrhea, Malaria, Jaundice, Cholera, Kidney Stones, Typhoid, and Hepatitis.

2. Diarrhea cases in children under the age of 5 :

- 19 households responded that none of the children under 5 suffered from diarrhea in the past 3 months.
- One household reported a possibility of diarrhea in a child under 5 in the past 3 months.

3. Epidemics in the Last Five Years(excluding COVID-19):

- No reported cases of epidemics among respondents in the last five years.

F. General information of the village (Sanitation, hygiene and institutions):

1. Toilet Facilities:

- Inside Premises : 3 Toilets
- No Toilet Inside Premises : 17 Toilets

2. All the households responded; there is no community toilet in the village.

3. Drainage System:

- Drainage System Available in the village : 1 Households Response
- No Proper Drainage System : 19 Households Response

4. How is waste disposed of in the village?



Number of Responded	Responses
6 Households	Waste is burnt in open areas in the village
10 Households	There is no proper waste disposal system in the village
1 Households	There is waste accumulated in certain areas of the village
2 Households	There are dustbins and collection vehicles for proper disposal of waste
1 Households	Waste is disposed of at home only, by burning

5. Awareness of Village Water and Sanitation Committee (VWSC):

- Don't Know : **11 Households**
- Heard of them in Gram Sabha : **1 Households**
- Know about VWSC : **8 Households**

6. Have there been meetings/resolutions taken during gram sabha related to water and sanitation?

Number of Households	Responses
6	Don't Know
3	No
5	About water tap connections
1	About water testing
2	About water tank cleaning, payment of bills etc.
3	Safe water and sanitation related awareness campaigns

Annexure 2.2

Monitoring Report - Microbial Water Quality Testing via H2S Test - Results Summary

Following are the results of microbial testing conducted in four villages of Pratapgarh and Dhariyawad block using H2S vials as a part of WSP assessment. Testing targeted three key points: the main drinking water source of each village, the FHTC/Tap of selected households, and the drinking water storage containers of selected households. For overall understanding of microbial testing, the government institutions (i.e, School, Anganwadi and Health Center) of each village were also tested.

The objective is to assess the overall microbial quality of drinking water across these different stages of consumption in the studied villages. The overall results will be inclusive of the lab testing results at the main source, 1 random household of each village and institutions.

Results -

Source -->	Main Source	FHTC (Tap)	Containers	Institutes- Tap	Institutes- Container
Panmodi	No Contaminants	No Contaminants	No Contaminants	Found Black in 1 Anganwadi	Yet to be done



Gadola	Found 1 Black	No Contaminants	Found Brown in 1 Households	Yet to be done	Found Black in 1 Anganwadi
Gadwas	No Contaminants	No Contaminants	Found Black in 2 Households	No Contaminants	No Contaminants
Jaya Khera	No Contaminants	No Contaminants	Found Black in 5 Households	No Contaminants	No Contaminants

Key Findings:

Household water containers: The testing identified potential microbial contamination in household water containers across three villages (Gadola, Gadwas, Jaya Khera). Discoloration (black or brown) was observed in containers, indicating the presence of organic matter and possible microbial growth.

Main sources and FHTCs: No contamination was detected in the main drinking water sources or FHTC taps of any village.

Implications:

Storage and handling practices: These results highlight the critical role of proper storage and handling practices in preventing microbial contamination at the household level. Unsafe practices during collection, storage, or handling can introduce contaminants into the water, even if the source is of good quality.

Block-level variations: The higher contamination rate in Dhariyawad block compared to Pratapgarh suggests potential differences in water hygiene awareness, access to safe storage containers, or other factors between the blocks.

Way Forward:

Understanding the overall result of water quality assessment inclusive of lab chemical testing results.



H2S Vias Results - Jaya Khera

C-67 and C69 have turned black indicating microbial contamination in water storage containers of households.



H2S Vias Results - Institutions Dhariyawad



Annexure 2.3

Monitoring Report - Water Quality Testing

The following tables contain the results of the Water Quality Testing conducted under WSP assessment of Government institutions including Anganwadi & School, and sample of container and tap of one randomly selected household of each village. The samples were collected by PHED Staff and INREM Foundation, the dates of the collection and other details are included in the table below.

Table 1. WQ Testing conducted by PHED LAB Pratapggarh

Samples Collected from: Anganwadi, School, JJM Water Source & 1 Randomly Selected Household

Block: Dhariyawad Block

Month of Data Collection: January 2024

SAMPLE CODE	SOURCE	VILLAGE	DATE OF COLLECTION	PH	Total Alkalinity	Total Hardness (As CaCO ₃)	Chloride (As Cl)	Nitrate (As NO ₃ -1)	Fluoride	Total Dissolved Solids	Results
HTL 3	TAP	GADWAS	18.01.2024	8	120	130	20	5	0.3	280	Under BIS 10500 Limit
HCL 3	CONTAINER	GADWAS	18.01.2024	8	130	150	40	8	0.4	330	Under BIS 10500 Limit
SL-7	TUBE WELL	GADWAS	18.01.2024	8	100	110	20	22	0.3	230	Under BIS 10500 Limit
SL-10	TUBE WELL	GADWAS	18.01.2024	8	120	100	20	21	0.3	250	Under BIS 10500 Limit
ALT-8	TAP	ANGAN WADI GADWAS	18.01.2024	7	140	130	20	23	0.3	290	Under BIS 10500 Limit
SL-13	TUBE WELL	JAYAKHERA	19.01.2024	8	180	110	40	11	0.6	350	Under BIS 10500 Limit
HTL-4	TAP	JAYAKHERA	19.01.2024	7	180	130	40	22	0.5	350	Under BIS 10500 Limit
HCL-4	CONTAINER	JAYAKHERA	19.01.2024	7	170	110	50	15	0.6	350	Under BIS 10500 Limit
SCT-11	CONTAINER	U.P.S JAYAKHERA	19.01.2024	7	180	150	20	12	0.5	360	Under BIS 10500 Limit
ALT-9	TAP	ANGAN WADI JAYAKHERA	19.01.2024	8	170	120	40	12	0.5	350	Under BIS 10500 Limit

Table 2 - WQ Testing conducted by PHED LAB Pratapggarh

Samples Collected from: Anganwadi, School, JJM Water Source & 1 Randomly Selected Household

Block: Pratapggarh Block

Month of Data Collection: January 2024

SAMPLE CODE	SOURCE	VILLAGE	DATE OF COLLECTION	PH	Total Alkalinity	Total Hardness (As CaCO ₃)	Chloride (As Cl)	Nitrate (As NO ₃ -1)	Fluoride	Total Dissolved Solids	Results
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						CaCO ₃)					
SL-5	OPENWELL-1	GADOLA	18.01.2024	8	110	100	50	5	0.4	280	Under BIS 10500 Limit
SL-6	OPENWELL-2	GADOLA	18.01.2024	8	120	140	20	5	0.3	290	Under BIS 10500 Limit
SL-7	OPENWELL-3	GADOLA	18.01.2024	7	140	110	60	6	0.5	310	Under BIS 10500 Limit
SL-8	OPENWELL-4	GADOLA	18.01.2024	7	110	110	50	5	0.4	290	Under BIS 10500 Limit
HCL-1	CONTAINER	PANMODI	19.01.2024	8	140	130	20	7	0.4	290	Under BIS 10500 Limit
SL-1	OPENWELL-1	PANMODI	19.01.2024	7	110	140	40	5	0.4	300	Under BIS 10500 Limit
SL-2	OPENWELL-2	PANMODI	19.01.2024	8	120	140	20	6	0.4	280	Under BIS 10500 Limit
ATL-1	TAP	ANGANWADI PANMODI	19.01.2024	8	170	120	40	12	0.5	350	Under BIS 10500 Limit
ACL-1	CONTAINER	ANGANWADI PANMODI	19.01.2024	7	180	150	20	12	0.5	360	Under BIS 10500 Limit

Table 3 - WQ Testing conducted by PHED LAB Pratapgarh

Samples Collected from: Anganwadi, School, JJM Water Source & 1 Randomly Selected Household

Block: Pratapgarh Block

Month of Data Collection: February 2024 (Second Round)

SAMPLE CODE	LAB SAMPLE NO.	SOURCE	COLLECTION VILLAGE	Date of Collection	PH	Total Alkalinity	Total Hardness (As CaCO ₃)	Chloride (As Cl)	Nitrate (As NO ₃ -1)	Fluoride	Total Dissolved Solids	Results
AT-1	3883	TAP	ANGANWADI PANMODI	14.02.2024	7.5	100	290	240	28	0.8	700	Under BIS 10500 Limit
AC-1	3884	CONTAINER	ANGANWADI PANMODI	14.02.2024	7.4	110	330	250	30	0.7	770	Under BIS 10500 Limit
AT-2	3885	TAP	ANGANWADI 2 PANMODI	14.02.2024	7.3	90	270	200	26	0.9	590	Under BIS 10500 Limit



AC-2	3886	CONTE NER	ANGANWA DI 2 PANMODI	14.02.2 024	7.7	100	240	240	27	0.7	660	Under BIS 10500 Limit
AT-3	3887	TAP	ANGANWA DI 3 PANMODI	14.02.2 024	7.5	110	280	300	25	0.8	790	Under BIS 10500 Limit
AC-3	3888	CONTAI NER	ANGANWA DI 3 PANMODI	14.02.2 024	7.5	80	210	210	8	0.7	520	Under BIS 10500 Limit
SCT-1	3889	TAP	GOVT.SCH OOL PANMODI	14.02.2 024	7.4	130	340	260	11	0.5	750	Under BIS 10500 Limit
MCT :	3800	TAP	HEALTH CENTAR	14.02.2 024	7.3	140	360	280	13	0.7	770	Under BIS 10500 Limit
S-9	3891	P.W.S	OLD OPEN WELL	14.02.2 024	7.2	90	180	120	12	0.8	440	Under BIS 10500 Limit
S-10	3892	P.W.S	NEAR POND	14.02.2 024	7.6	100	260	150	10	0.6	570	Under BIS 10500 Limit
AT-4	3895	TAP	NEAR BANK	15.02.2 024	7.3	100	230	180	13	0.5	570	Under BIS 10500 Limit
AC-4	3896	CONTAI NER	NEAR BANK	15.02.2 024	7.2	90	210	110	12	0.5	440	Under BIS 10500 Limit
AC-5	3897	CONTAI NER	NEAR SCHOOL	15.02.2 024	7.4	110	260	200	10	0.4	600	Under BIS 10500 Limit
AT-6	3898	TAP	ANGANWA DI GADOLA	15.02.2 024	7.2	110	240	170	8	0.7	580	Under BIS 10500 Limit
AC-6	3899	CONTAI NER	ANGANWA DI GADOLA	15.02.2 024	7.4	120	230	190	6	0.8	590	Under BIS 10500 Limit
SCT-3	3900	TAP	GOVT.SCH OOL PANMODI	15.02.2 024	7.2	90	160	150	9	0.7	450	Under BIS 10500 Limit
SCC-3	3901	CONTAI NER	GOVT.SCH OOL PANMODI	15.02.2 024	7.5	80	180	120	10	0.5	420	Under BIS 10500 Limit



T-32	3902	TAP	NANA LAL GAYRI	15.02.2 024	7.3	90	130	50	11	0.2	310	Under BIS 10500 Limit
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Annexure 2.4

Monitoring Report - Sanitary Inspection of Main Source of Water - Results Summary

Regular sanitary inspections of a village's main water source are paramount to securing safe drinking water for the community. These on-site assessments aim to identify actual and potential sources of microbial contamination.

The inspection process assesses both the functionality and operation of the water system itself and external environmental factors like the proximity of toilets. Conducted monthly by both community members and trained laboratory officials, these inspections rely on standardized forms with "yes/no" questions.

In this assessment, sanitary inspections have been carried out of the Jal Jeevan Mission (JJM) sources, as indicated by the District stakeholders of PHED - Pratapgarh. The sources are of two kinds, pipeline connected to tubewells and open-wells. In alignment with this, specific formats are used as per the DDWS, Ministry of Jal Shakti, GOI latest version of "Drinking Water Quality Monitoring and Surveillance Framework" issued in October 2021.

For tubewells/borewells and for open wells (formats are attached in the annexure). As suggested in the guideline, the formats have been modified suiting the needs in the selected area of study.

General Details of the Main Source -

Village	H2S Number	Type of Source	Tank last cleaned	Source of Water
Panmodi	S-1	Open Well	19/01/2024	Ground Water
Panmodi	S-2	Open Well	19/01/2024	Ground Water
Gadola	S-5	Open Well	19/01/2024	Ground Water
Gadola	S-7	Open Well	19/01/2024	Ground Water
Gadola	S-6	Open Well	19/01/2024	Ground Water
Gadola	S-9	Open Well	19/01/2024	Ground Water
Gadola	S-10	Open Well	19/01/2024	Ground Water
Gadwas	S-11	Tube well	01/12/2023	Ground Water
Jaya Khera	S-13	Tube well	01/10/2023	Ground Water

Sanitary Inspection Results For sources in Dhariyawad Block and Pratapgarh Block (Tube-Wells)

The format rates the risk score of **tubewell** from 0 to 9 as per the following 9 questions where 0-3 is Low, 3-6 is Medium, and 7-9 is Very High.

The data collected in the two villages of Dhariyawad Block indicated the following results:

Questionnaire	Gadwas	Jaya Khera
	S11	S13
H2S Result ->	No Contaminants	No Contaminants



Sewer or latrine within 30m of pump-house?	No	No
Is the nearest latrine unsewered?	No	No
Is there any source of other pollution within 30m?	Yes	No
Is there an uncapped well within 100m?	No	Yes
Is the drainage around the pump house faulty?	No	No
Is the fencing damaged allowing animal entry?	No	No
Is the floor of the pump house permeable to water?	No	No
Is there water logging around the pump house?	No	No
Is the borewell seal insanitary?	No	No
Results →	1/9 (Low)	1/9 (Low)

- **Gadwas: S9** - Low risk (1/9) - This well scores positively on most points, suggesting a low risk of contamination. Except for other sources of contamination.
- **Jaya Khera: S13** - Low risk (1/9) - Similar to Gadwas, this well appears well-maintained with minimal risk factors identified. Except uncapped well within 100m.

Sanitary Inspection Results For sources in Pratapgarh Block (Open Wells):

The format rates the risk score of **openwell** from 0 to 10 as per the following 10 questions where 0-2 is Low, 3-5 is Medium, 6-8 is High and 9-10 is Very High

The data collected in the two villages of Pratapgarh Block indicated the following results:

Questionnaire	Panmodi		Gadola			
	S1	S2	S5	S7	S9	S10
H2S Result ->	No Contaminants	No Contaminants	No Contaminants	No Contaminants	Black	No Contaminants
Type of source	Open-well	Open-well	Open-well	Open-well	Open-well	Open-well
Is there a latrine or sewer within 30m of the dugwell? (Yes - Risk ↑/ No - Risk ↓)	No	No	No	No	No	No
Is the wall of the well lined properly and the well covered adequately? (Yes - Risk ↓/ No - Risk ↑)	Yes	Yes	Yes	Yes	No	No
Is open defecation prevalent or cattle-dung found within 50 m ? (Yes - Risk ↑/ No - Risk ↓)	No	No	No	No	No	No
Is the well used for bathing and washing of clothes? (Yes - Risk ↑/ No - Risk ↓)	No	No	No	No	No	No
Is there any water drainage facility available around the platform of the well? (Yes - Risk ↓/ No - Risk ↑)	No	Yes	No	No	No	No
Does the water of the well appear visibly clean? (Yes - Risk ↓/ No - Risk ↑)	Yes	Yes	Yes	Yes	Yes	Yes
Does the drainage facility lead to water stagnation within 30 m of the wall? (Yes - Risk ↑/ No - Risk ↓)	No	No	No	No	No	No



Is there any other source of pollution within 10 m of the well? (Yes - Risk ↑/ No - Risk ↓)	Yes	Yes	No	Yes	No	No
Was the well chlorinated during the last 7 days? (Yes - Risk ↓/ No - Risk ↑)	No	No	No	No	No	No
Does the pipe from the open well to the water tank look sturdy and with no leakage? (Yes - Risk ↓/ No - Risk ↑)	No	No	No	No	Yes	No
Results →	4/10 (Medium)	3/10 (Medium)	3/10 (Medium)	4/10 (Medium)	3/10 (Medium)	4/10 (Medium)
<ul style="list-style-type: none"> ● Panmodi: <ul style="list-style-type: none"> ○ S1: Medium risk (4/10) - Water Drainage Facility unavailability, Other sources of pollution, chlorination issue and chance of leakage. ○ S2: Medium risk (3/10) - Other sources of pollution, chlorination issue and chance of leakage. ● Gadwas: <ul style="list-style-type: none"> ○ S7: Medium risk (3/10) - Water Drainage Facility unavailability, chlorination issue and chance of leakage. ○ S6: Medium risk (4/10) - Water Drainage Facility unavailability, Other source of pollution, chlorination issue and chance of leakage. 						