Technological Task 26	**Implementation of new technologies and dosing technologies to combat corrosion.**
Essence of the Problem:	Pipeline and technological equipment corrosion caused by the composition of oil and water at the field, as well as the characteristics of technological regimes, leads to negative consequences such as pipeline ruptures and leaks, as well as halts in technological processes during repairs. Besides pipeline corrosion, negative consequences are also caused by the corrosion of technological dynamic equipment and ZRA. To improve the efficiency of the oil field, it is necessary to enhance methods to prevent corrosion and methods to combat corrosion. The task includes determining the causes of corrosion formation in surface equipment of the collection system at CPPN and CPPD field surface equipment.
Required Technological Parameters:	1. Collection and analysis of field information on the intensity of corrosion in surface oilfield equipment. Collection of information on technological objects based on pressure at the inlet and outlet, temperature, and pH. Physicochemical properties of the extracted oil, water, and dissolved gases. 2. Identification of technological lines, nodes, and units most susceptible to corrosion, the consequences of which have the most negative impact on oil field processes. 3. Research on applied chemical reagents to prevent and combat corrosion, analysis of their effectiveness, as well as analysis of the technology and dosing regimes of chemical reagents. 4. Analysis of possible conflicts of chemical reagents with residual reagents from other technological cycles that reduce the effectiveness of corrosion control. 5. Selection of technological objects for protection against corrosion and monitoring: • Drain water collector from NFS UPSV, CPPN inlet of each BKNS • Albsemanian water collector 6. Sampling of co-produced water and study of the physicochemical properties and composition of oil and field water for preliminary assessment of the corrosive activity of the liquid (level of CO_2, O_2, pH, H_2S, and six-component water composition, KVCH. No more than 20 samples). • Drain water collector from NFS UPSV, CPPN • Albsemanian water collector 7. Sampling and cutting of pipes with corrosion damage and deposits to determine the type of corrosion damage and the type of deposits in laboratory conditions. 8. Laboratory studies: • Incoming control of IK; • Bench laboratory tests on water simulants (with physicochemical properties of co-produced water) with the addition of acid gases to determine the overall background corrosion rate. • Study of the effective action and optimal concentration of IK in laboratory conditions;

	• Determination of the residual content of IK (no more than 20 samples after the start of IK injection);
	• Identification of the causes of corrosion from samples taken from the object:
	  o Full chemical analysis (spectral),
	  o Chemical analysis of corrosion products;
	  o Comprehensive metallographic tests;
	  o Issuance of test protocols.
	9. Installation of corrosion control units (CCU) at control points on the pipeline (insertion of a branch pipe with a valve) on the water collector line UPSV, CPPN, inlet of each BKNS, Albsemanian water collector.
	10. Installation of witness samples (WS) and measurement of the background corrosion rate by gravimetric method at CCU on technological objects. Exposure time of witness samples is 20-30 days.
	11. Monthly installation and extraction of witness samples and measurement of corrosion rate at CCU after injecting corrosion inhibitor at technological objects (exposure time of coupons 20-30 days).
	12. Development of a comprehensive solution for combating pipeline corrosion.
	13. Processing of results, preparation of a report on the results of the work performed, issuance of conclusions.
	14. Development of a scientific report.
	15. Requirements for organization and execution:
	• To collect information and study operational documentation, the Executor travels to the location of the object.
	• The entire volume of technical inspection services is provided by the Executor at its own expense, including accommodation and meals.
	• The Executor must have an accredited or certified laboratory (own or rented, or a service agreement). Supporting documents are an accreditation certificate or a measurement condition assessment certificate, or a service agreement.
	• If necessary, the Customer provides access to the Executor to production units and allows the Executor to collect necessary technical data in accordance with the requirements.

Scale of the Problem:	Frequent ruptures due to corrosion in pipelines.
Existing Methods for Solving the Problem:	Protection is carried out using a chemical method with the injection of a corrosion inhibitor. Possible methods include: • Corrosion monitoring system at the field • Intelligent chemicalization systems • Prolonged-action matrix reagents to enhance the effectiveness of corrosion inhibitors.
Contact Person: Full name, position, phone, email.	
Expert Notes:	