Project Newton in Calhoun County

The right project, in the right place, being proposed by the right people.

Newton Manufacturing, LLC (Newton), a wholly-owned subsidiary of Novus International, Inc., is proposing construction of a new animal nutrition facility in Calhoun County, Texas. The facility would produce a livestock feed supplement called ALIMET® feed supplement. ALIMET® provides a methionine source for livestock in the form of a methionine hydroxy analog. Methionine is a naturally occurring and essential amino acid supplement in poultry, swine, cattle and aquaculture diets.

Project Newton
TCEQ Permit Application Process for Two Class I Hazardous Disposal Wells

Project Newton has submitted permit applications to the Texas Commission on Environmental Quality (TCEQ) for its proposed new ALIMET® production facility in Calhoun County. The ALIMET® production process yields methionine hydroxy analog – or ALIMET® – and a salt water byproduct. The salt water byproduct will be disposed deep underground through the injection wells proposed in these permit applications.

These proposed injection wells are regulated under the Texas Underground Injection Control (UIC) Program, administered by the TCEQ. The wells and operating conditions for injection of the salt waste water must be approved by the TCEQ, and requirements for safe operation will be clearly outlined in the permits for each well.

The injection well permitting process requires extensive evaluation of several environmental factors, including subsurface geologic, hydrologic and geochemical conditions. The results of these evaluations are used as the basis for developing a waste injection analysis, which is used to design the proposed injection wells in a manner that ensures installation and operation will not adversely impact the public or the environment. The entire well siting process, waste injection analysis, and well design is performed by certified Texas Professional Geoscientists and licensed Texas Professional Engineers, who incorporate this information into the TCEQ UIC permit application.

The permit applications are reviewed and validated by state UIC well experts at the TCEQ. The TCEQ will not issue a final permit to construct and will not approve operation of the proposed wells until all data included in the permit application have been fully validated by the state UIC well experts.

The results of each step of the well siting process are summarized and illustrated below.

Subsurface Condition Evaluation: Project Newton is proposing to inject waste deep underground into a geologic interval located below the surface in sands of the Frio formation that can accept waste water, referred to in this application as the "Deep Frio." The Deep Frio geologic formation is physically separated from any Underground Sources of Drinking Water (USDW) by overlying geologic earth layers that are more than a mile thick, which include broad alternating layers of clay and shale that act as a "cap-rock" because they are known to be extremely difficult for water to penetrate. The cap rocks prevent the upward movement of the waste water during and after injection.

All freshwater and non-freshwater wells (usually oil and gas wells or other disposal wells, referred to as "artificial penetrations") within 2.5 miles of the proposed injection well locations are identified and evaluated as part of the Subsurface Condition Evaluation. Extensive research was conducted to ensure all of the artificial penetrations within the 2.5 mile radius are properly constructed or properly plugged and secured to prevent the movement of injected fluids.

Waste Injection Analysis: Project Newton is proposing operations to a maximum continuous injection rate of 150 gallons per minute, to be split between two wells located in the Deep Frio geologic formation. The proposed operating lifetime of the wells is 50 years. The waste injection analysis performed for the Deep Frio geologic formation indicates that the formation can safely store the proposed amount of waste without adversely impacting the integrity of the overlying geologic layers or drinking water.

Well Design and Construction: Project Newton's proposed wells were designed by a Texas Registered Professional Engineer and meet all regulatory and safety guidelines. The materials selected for construction of the wells are specifically designed to

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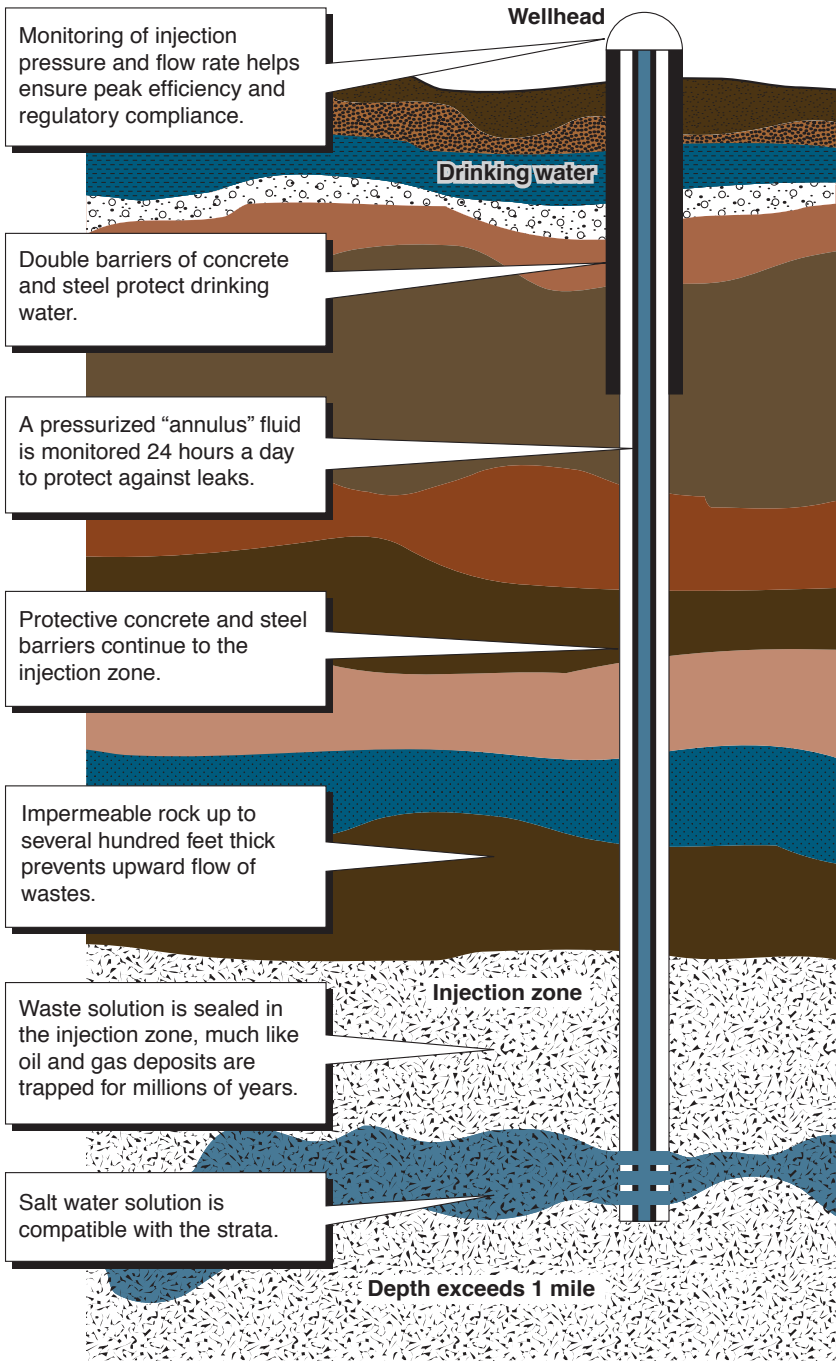
work effectively with the waste stream and underground conditions at the site. The technology and equipment being used has been proven to work effectively at other injection well sites.

Before authorizing well operation, the TCEQ requires that detailed reports of all well construction and testing be submitted for additional review and validation. The well construction reports will include test results that attest the wells have been properly constructed without defects, and demonstrate that the well can be safely operated while meeting all regulations and permit conditions. The wells will be monitored continuously and tested periodically during operations to prove compliance, and the monitoring and testing results will be submitted to the TCEQ. The permit application also includes environmentally-protective procedures for properly closing and plugging each well once it is ultimately taken out of service.

Injection Wells vs. "Fracking": The deep well waste injection process is quite different from high volume hydraulic fracturing, a process often referred to as "fracking." High volume hydraulic fracturing is performed to stimulate the flow of natural gas or oil in production wells. This hydraulic fracturing process typically involves pumping large quantities of fluids at high pressure down a wellbore into a target hydrocarbon producing formation. The pumped fluid under pressure opens or creates cracks in the targeted rock formation. Sand or proppant is then emplaced into the fractures to keep them open once the hydraulic fracking treatment is complete, allowing oil and gas to flow more freely through the production well. The Project Newton wells will not be "fracked" to stimulate natural gas or oil flow. These wells are designated for waste injection only, and that injection will be conducted at pressures and rates that will not cause cracks or fractures in the proposed injection interval. Extensive studies examining the potential pressure changes that could result underground from waste injection are included in the permit application. The results of these studies are used to understand the pressure limits to impose on the waste injection process such that the integrity of the proposed injection interval is protected.

Class I Industrial Deep Well Safeguards



Courtesy of UITC

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