

TWMA managed and operated TCC RotoTruck - mobile drilling waste treatment unit saves dollars on drilling fluids and solids control equipment.

Project Scope

An operator working in Wyoming was concerned about the environmental impact of their drilling operations and started looking for the best environmental practices to apply to their operations. The client was using encapsulation methods for stabilizing the drilling wastes prior to burial on location in line with regulatory requirements. The drill team, along with the fluids coordinator, was looking for advanced technologies to contain, process, recycle and reuse the drilling fluids from their extensive drilling program, which would ultimately assist them in achieving their environmental goals. The project also had to meet the Bureau of Land Management (BLM) and Wyoming Oil and Gas Conservation Commission's (WOGCC) strict local environmental legislation for waste disposal and analysis.

TWMA Solution

In May 2010, TWMA mobilized a TCC RotoTruck at the rig location in Wyoming as a pilot project, to see if the equipment operated as efficiently as anticipated. When the TCC RotoTruck arrived on location, there were 445.27 tons of drilling wastes stored in steel tanks. TWMA managed the handling, containment and processing of this material. The TCC RotoTruck processed these wastes over a period of 89 hours, averaging a processing rate of 5.1 tons per hour, recovering the oil and water from the drill cuttings with no emissions from the process itself to the atmosphere. The analysis from the recovered materials passed the BLM tests.

Project Results

Originally the equipment was designed to reduce the environmental impact through the recovery of oil on cuttings however by using the TCC RotoTruck, it's been proven that there is a financial bonus to operators. By selectively recovering almost 100 percent of the base oil on the drilling wastes and reusing it in the drilling fluids, the operator was able to recover and reuse 340.61 bbls of fluid, which had a value of approximately \$50,000. The recovered base oil had no low gravity solids, so no dilution of fluids was required as is the case when utilizing a cuttings dryer. Also, there was no requirement to centrifuge the recovered base fluid, and additionally no need for a drying shaker pre-treatment as all fluids are recovered through the thermal process. This represented a saving of \$2,000 per rig per day.



"TWMA was contracted by an operator in Wyoming concerned about the environmental impact of their drilling operations. TWMA successfully contained, processed, recycled and reused the drilling wastes while saving the operator over \$55,000."

✓ **Project Results**

The recovered water from the drilling wastes was reused to rewet the recovered powder, which was buried and covered on location in accordance with BLM regulations. TWMA successfully provided a sustainable solution for processing drilling wastes at source, with zero impact to the rig or location layout due to the compact size. The result for the client was significant cost savings, in conjunction with significant operational and environmental benefits.

By utilizing the TWMA designed, managed and operated TCC RotoTruck mobile cuttings treatment solution, the client saved \$55,965.99

⚙️ **Environmental Analysis**

Oil Based Drilling Wastes, Wyoming – Pre Treatment						
Well Location	Date	Sample Date	Leachate – TDS (mg/L)	Leachate – TPH-Organics (mg/L)	Total Petroleum Hydrocarbon – Organics (mg/kg)	
Wyoming	2010	May 2010	4150	124	158,045	
Oil and Gas Conservation Commission Limits (“Guidelines for Closure of Unlined Production Pits”, 12/10/02)			5000	10	1000 A, 10000B	
Post Treatment Analytical Data Recovered Material, Wyoming-						
Well Location	Date Processed	Sample Date	Sodium Adsorption Ration (SAR)	Leachate – TDS (mg/L)	Leachate – TPH-Organics (mg/L)	Total Petroleum Hydrocarbon – Organics (mg/kg)
Wyoming	2010	6/10	9.7	954	<0.5	<10
Wyoming	2010	6/10	9.8	849	<0.5	<10
Oil and Gas Conservation Commission Limits (“Guidelines for Closure of Unlined Production Pits”, 12/10/02)			12	5000	10	1000A, 10000B
A= Limit for Critical Areas defined by the “Guideline for Closure of Unlined Production Pits”, 12/10/02 B= Limit for Non-critical Areas established, following WOGCC ‘Guideline for Closure of Unlined Production Pits”, 12/10/02						

☰ **Summary**

TWMA has continually improved the performance and operations of the TCC RotoTruck globally by integrating innovative ideas throughout the fleet. The footprint has been reduced, the processing rates increased, and at the same time where required utilized the highest specification of power source to further reduce any environmental impact to operations.

Since the TCC RotoTruck has been utilized in the field globally, TWMA has processed in excess of 120 wells worth of drilling wastes, recovering over 60,000 barrels of base oil with an estimated value of \$9,000,000.

