CASE STUDY

BrightShield Enhances Oil Removal Filter (ORF) Performance Without Caustic

CHALLENGES

This oil sands facility was using caustic to backflush and clean the walnut shell media (nutshell media) in their oil removal filter (ORF). Previous caustic cleaning did not meet expectations and the extreme pH damaged the filter media.

SOLUTIONS

Using the BrightShield Process, Guardian combined lab testing with system review to design a safe, effective cleaning program for the ORF walnut shell media.

A 7.5% Hydrosol and 0.9% Bright Restore solution, totaling 20 cubes of fluid, was circulated for 4 hours using a chem unit.

This approach removed oil fouling without pH damage or media degradation. The spent solution was safely flushed downstream with no disposal concerns.

RESULTS

Enhanced ORF Performance

Walnut Shell Media was successfully cleaned and oil removed, enhancing performance of the ORF.

Improved Oil Removal

Walnut Shell Media cleaning was improved over the previous caustic cleaning. No high/low pH cleaning required.

No Disposal Issues

After cleaning, treatment solution was flushed down stream for processing.

AT A GLANCE

An oil sands facility needed a safer way to clean ORF walnut shell media and after media filters to avoid caustic-related damage. Through the BrightShield Process, a custom chemical solution that improved performance without pH risk, mechanical intervention, or disposal issues.

KEY METRICS

ENHANCED
ORF PERFORMANCE

IMPROVED
OIL REMOVAL

ELIMINATED
DAMAGE FROM HIGH/LOW PH CLEANING AND CAUSTIC

CASE STUDY

Innovative Oil Removal Filter (ORF) Cleaning: How Hydrosol Cleaned Walnut Shell Media without Caustic and Enhanced Oil Removal

DATA

LAB TESTING

Pictures demonstrate the effectiveness of the BrightShield process in cleaning SAGD ORF samples received 'as-is'. **Before:** Fouled Walnut Shell Media (Nutshell Media). **After:** Walnut Shell Media cleaned using the BrightShield process.

BEFORE

AFTER

ORF WALNUT SHELL MEDIA CLEANING

Fluid samples were collected before (Sample 1), 30 minutes into cleaning (Sample 2), and after cleaning was complete (Sample 3). High solids and high oil & grease values prove cleaning effect of the chemical combination.

Analytics	Sample 1	Sample 2	Sample 3
Total Solids* [mg/L]	2,545	15,093	24,365
Oil & Grease [ppm]	78	6739	6045

* Total solids test was performed in duplicates and average values are reported.