DCOI Treatment Analysis – UP50 Treatment 1, 2, 3 and 4

Scope: The scope of this experiment was to attempt to force gelling in DCOI during a pressure treatment cycle.

Treatment Cycle

The treatment cycle recommended by Viance was slightly different than the actual treatment used due to different equipment available. Both cycle requirements may be observed in Table 1.

Table 1. Pilot plant treatment cycle of UP-50

	Requested by Viance	Completed by REDACTED

REDACTED

Table 2. UP-50 solution uptake in Douglas Fir.

	Wood Dimensions			Weight (kg)		
Trt	Dia (m)	Length (m)	Vol (m^3)	Pre weight (kg)	Post weight (kg)	Uptake (kg)
1	0.356	3.048	0.303	170	179.2	9.2
2	0.368	3.035	0.323	170	180.6	10.6
3	0.368	3.023	0.322	150	170	20.0
4	0.381	3.023	0.344	180	201	21.0

Table 3. Summary of UP-50 treatment results

Treatment	Solution Strength (%DCOI)	Outer Zone (pcf)	Inner Zone (pcf)	Solution Uptake (kg)
1	2.38	0.482	0.291	9.2
2	2.37	0.313	0.162	10.6
3	2.40	0.283	0.110	20.0
4	2.42	0.381	0.248	21.0

Core Assays

Based on the methods provided by Viance, 10 assay cores were. These cores were collected from the outer zone, where the core length was ¼'' – 1'', resulting in a total length of 7.5''. The inner core lengths were 2'' – 2.5'' resulting in a total length of 5''. Figure 1 to Figure 3 represent the cores collected and analyzed for UP-50 treatment 1. Figures 4-6 are for UP-50 treatment 2. Figures 7-9 are for Treatment 3. Figures 10-12 are for treatment 4. All the cores met the required retentions of 0.2 pcf and 0.1 pcf for the outer zones and inner zones respectively.

First Wax Treatment

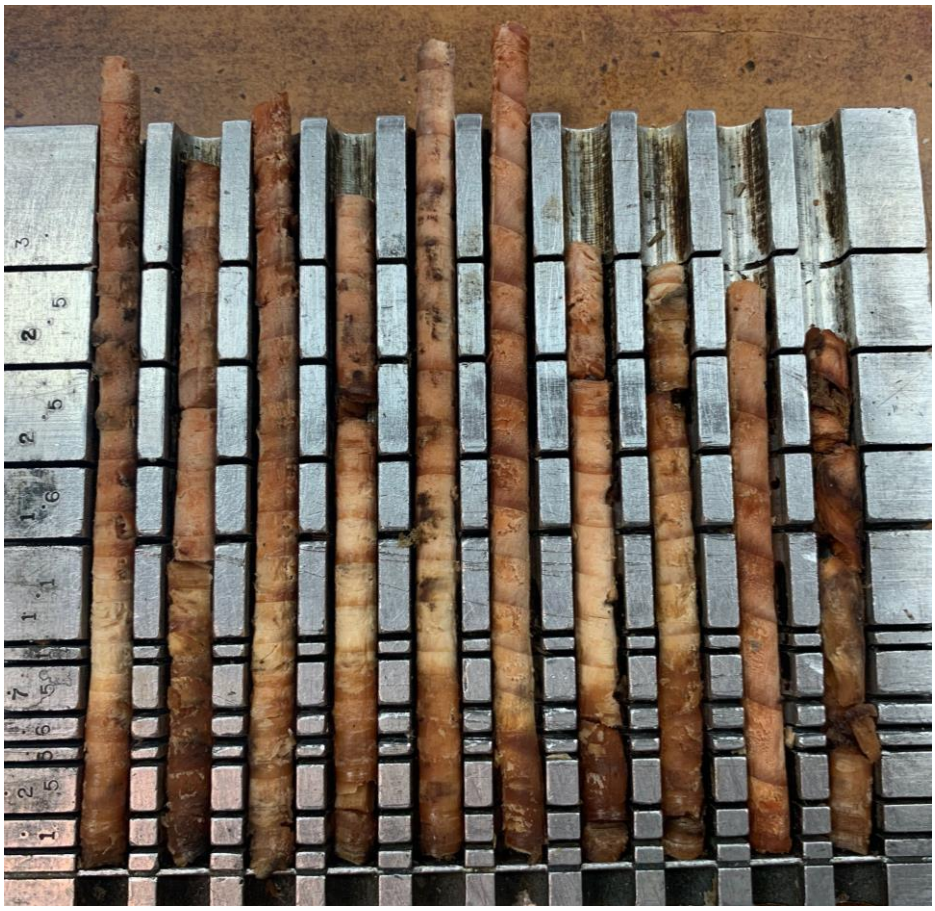

Figure 1. UP50- Treatment 1, Assay cores after coring

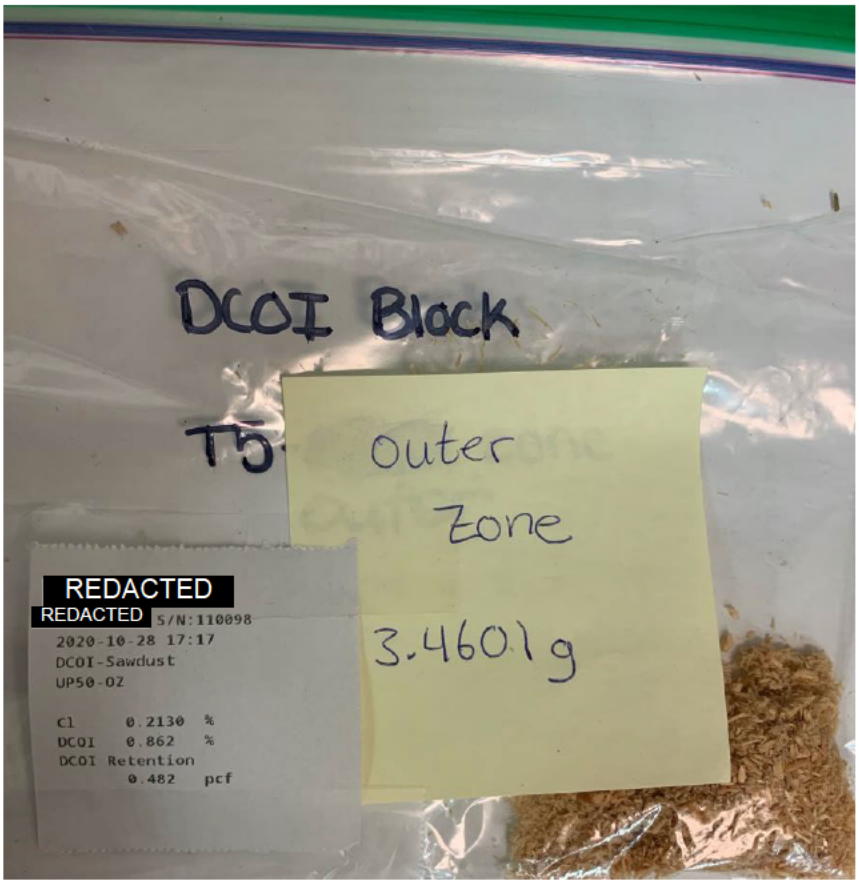

Figure 2. UP50- Treatment 1, Sawdust of outer core analyzed on REDACTED with a final result of 0.482 pcf.

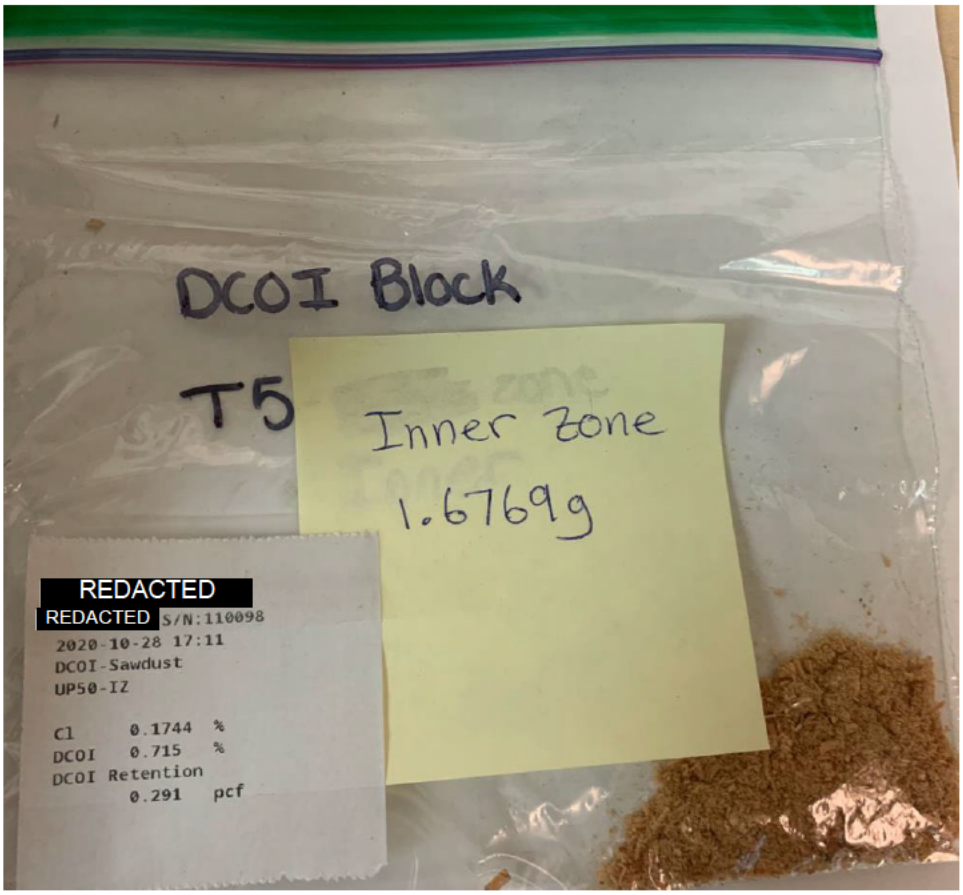

Figure 3. UP50- Treatment 1, Sawdust of inner core analyzed on REDACTED with a final result of 0.291 pcf.

Second Wax Treatment

Figure 4. UP50- Treatment 2, Assay cores after coring

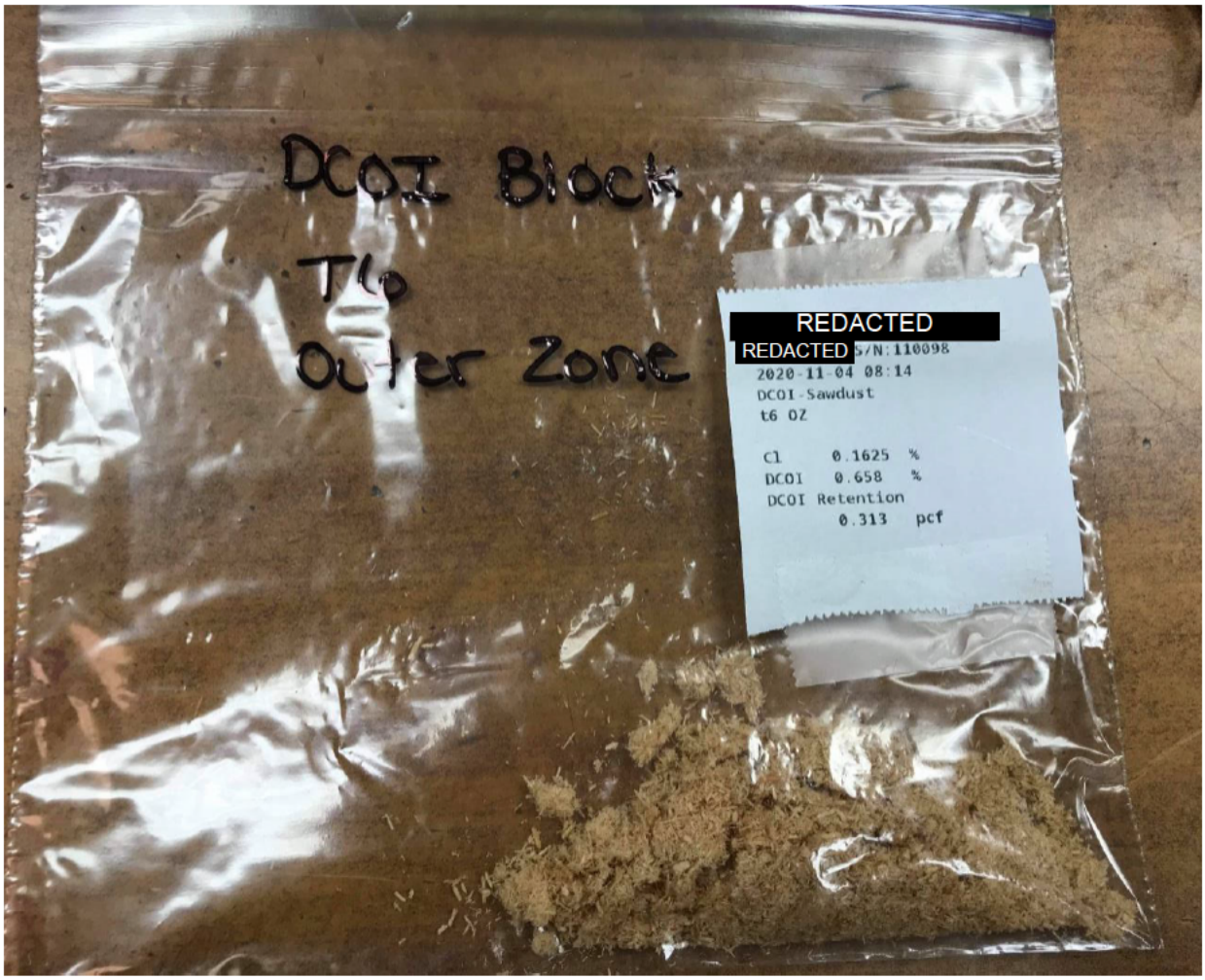

Figure 5. UP50- Treatment 2, Sawdust of outer core analyzed on REDACTED with a final result of 0.313 pcf.

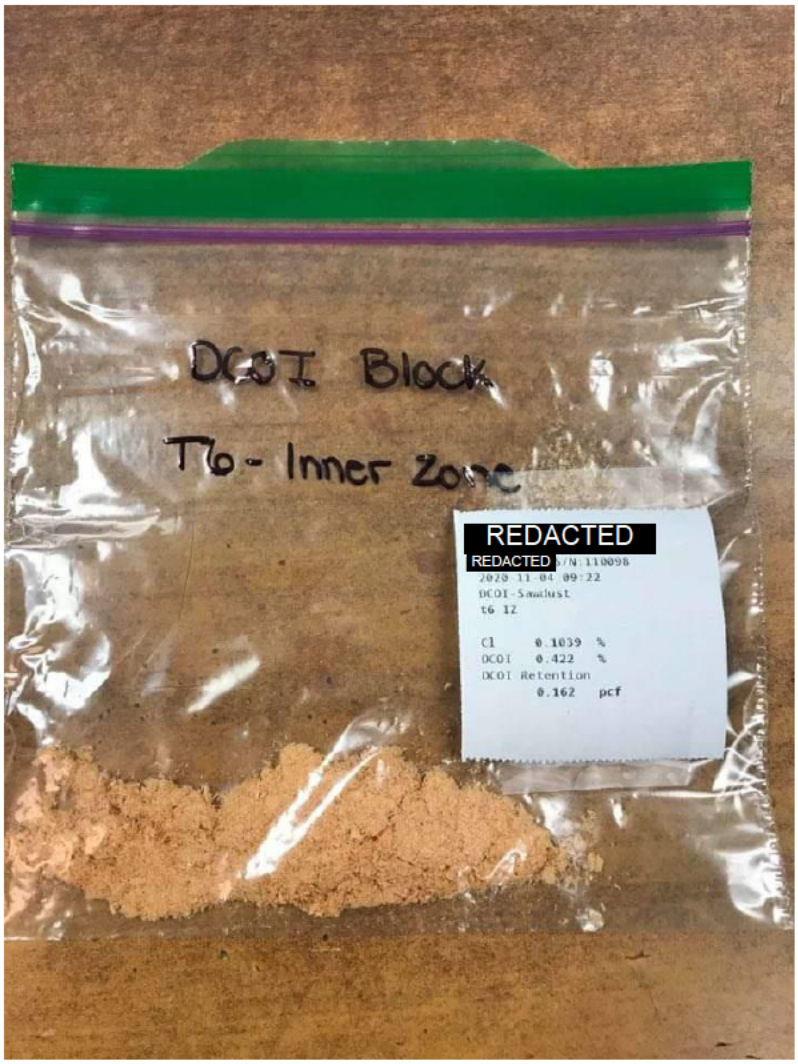

Figure 6. UP50- Treatment 2, Sawdust of inner core analyzed on REDACTED with a final result of 0.162 pcf.

Third Wax Treatment

Figure 7. UP50- Treatment 3, Assay cores after coring

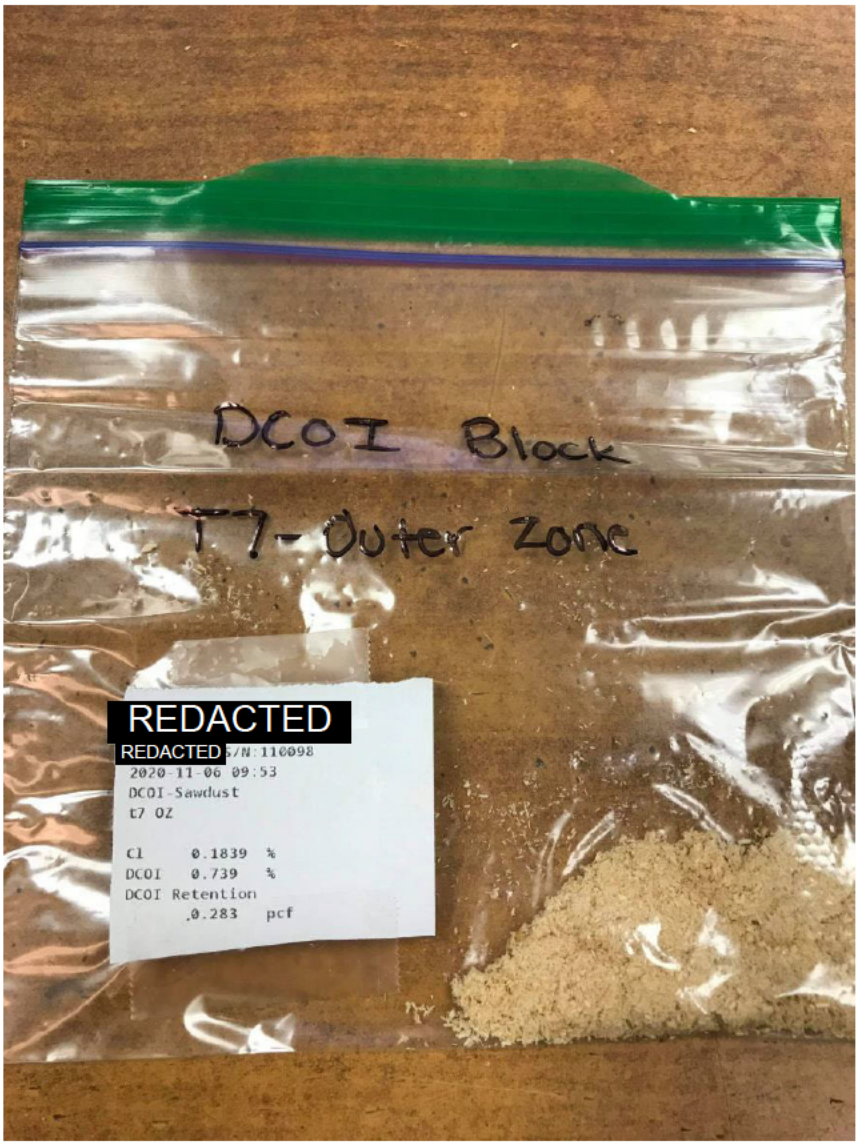

Figure 8. UP50- Treatment 3, Sawdust of outer core analyzed on REDACTED with a final result of 0.283 pcf.

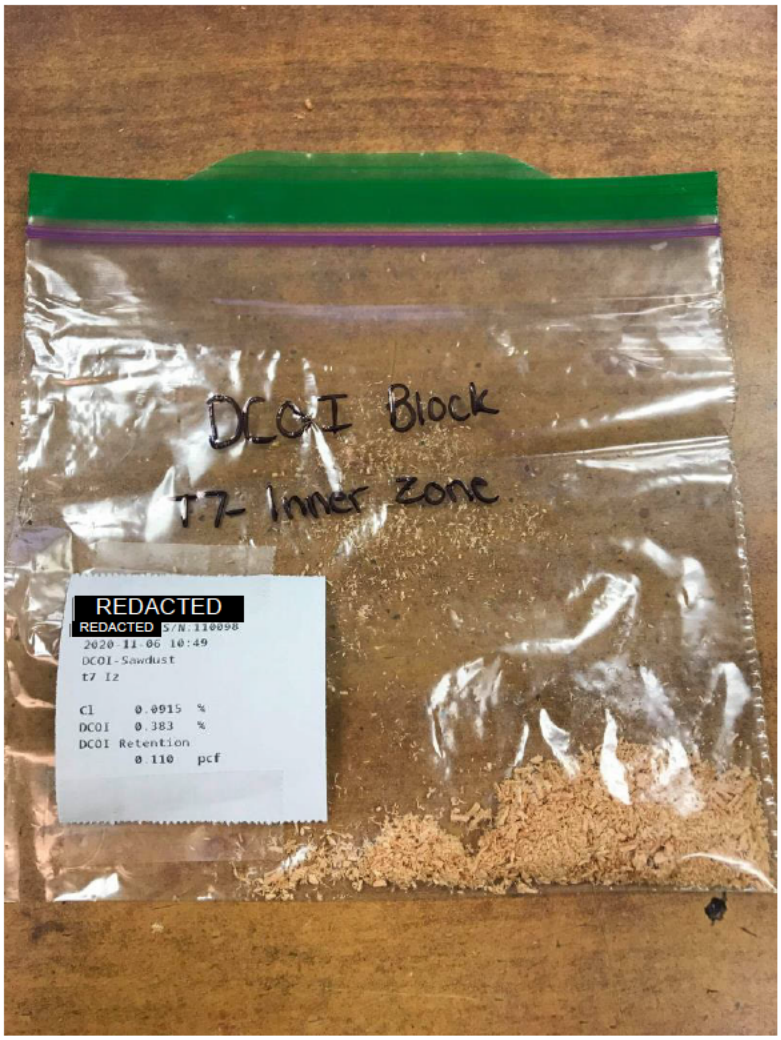

Figure 9. UP50- Treatment 3, Sawdust of inner core analyzed on REDACTED with a final result of 0.110 pcf.

Fourth Wax Treatment

Figure 10. UP50- Treatment 3, Assay cores after coring

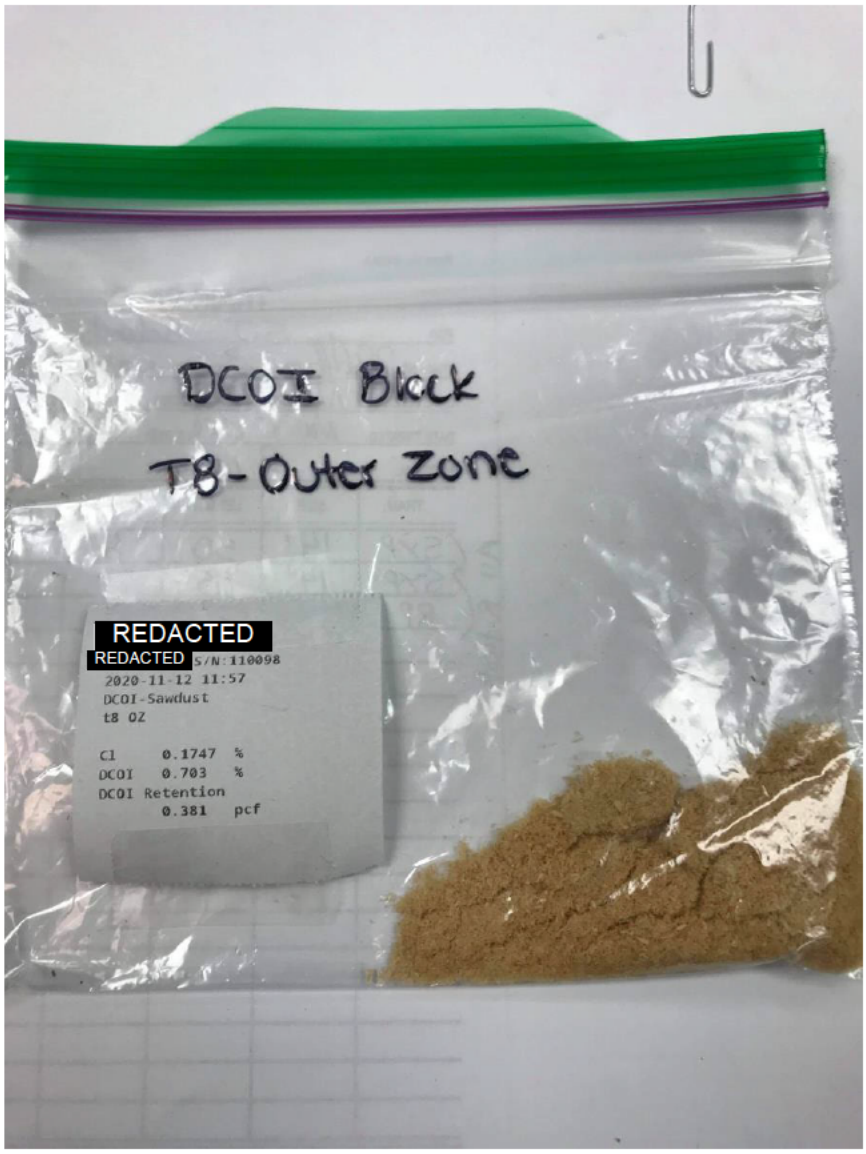

Figure 11 UP50- Treatment 3, Sawdust of outer core analyzed on [redacted] with a final result of 0.381 pcf.

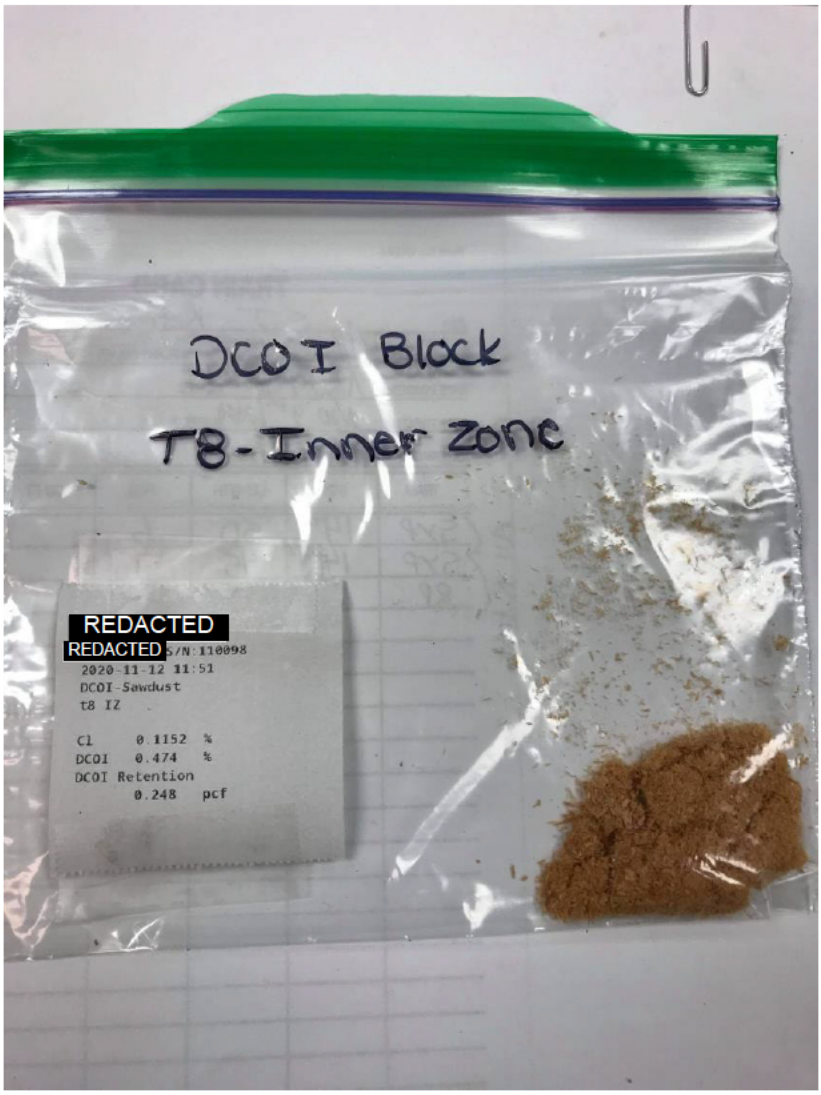

Figure 12. UP50- Treatment 3, Sawdust of inner core analyzed on REDACTED with a final result of 0.248 pcf.

Summary

For treatment 1 the solution uptake was 9.2 kg and the retentions were 0.482 pcf and 0.291 pcf, for the outer and inner zones respectively. For treatment 2 with UP-50 the solution uptake was 10.6 kg, the inner zone was 0.162 pcf and the outer zone was 0.313 pcf. For treatment 3 the inner zone assay was 0.110 pcf and the outer zone assay was 0.283 pcf, the solution uptake was 20.0 kg. For treatment 4 the assay was 0.381 pcf and 0.248 pcf for the outer and inner zone respectively and the solution uptake was 21.0 kg.