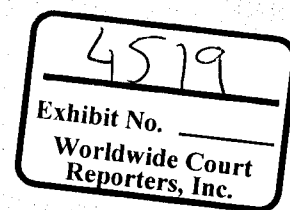


Lost Circulation Recommended Practices

Lost Circulation Decision Trees

Version 1. Next version will be updated in January 2010.

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LCM products from service companies

	M-I	Baroid	Baker	Turbochem	Strata
High FL with compressive strength ≥ 1000 psi	N/A*	N/A*	N/A*	EZ-Squeeze	N/A*
High FL with low compressive strength ≤ 500 psi	Form-A-Squeeze/ EMI 1800	Duo-squeeze	Solu-Squeeze	N/A*	Frac-Attack
Viscous Pill		Hydro-plug/Fuse it		Swell LCM	
X-link***	Form-A-set	N Squeeze/N Plex	X-link	N/A*	N/A*
<small>Looks like ground red paper</small> Fine fiber	MIX II	Barofibre	Check-loss	SYN-seal	Strata-LCM
Filament Fiber → looks like barchamitch	VinSeal or KwikSeal**	Baroseal or Singleseal	Mil-Cedar or KwikSeal**	N/A*	Strata- Vanguard
CaCO ₃ fine (F)****	Safecarb 2	Baracarb 5	Milcarb 5	N/A*	N/A*
	Safecarb 20	Baracarb 25	Milcarb 25	N/A*	N/A*
	Safecarb 40	Baracarb 50	Milcarb 50	N/A*	N/A*
CaCO ₃ medium (M)****	Safecarb 250	Baracarb 150	Milcarb 150	N/A*	N/A*
CaCO ₃ coarse (C)****	Safecarb 500	N/A*	Milcarb 450	N/A*	N/A*
CaCO ₃ extra coarse (XC)****	Safecarb 750	Baracarb 600	Milcarb 600	N/A*	N/A*
Graphite fine (F)	G-Seal F	Steelseal 100	LC Lube Fine	N/A*	N/A*
Graphite Meadium (M)	G-Seal Plus	Steelseal 400	LC Lube	N/A*	N/A*

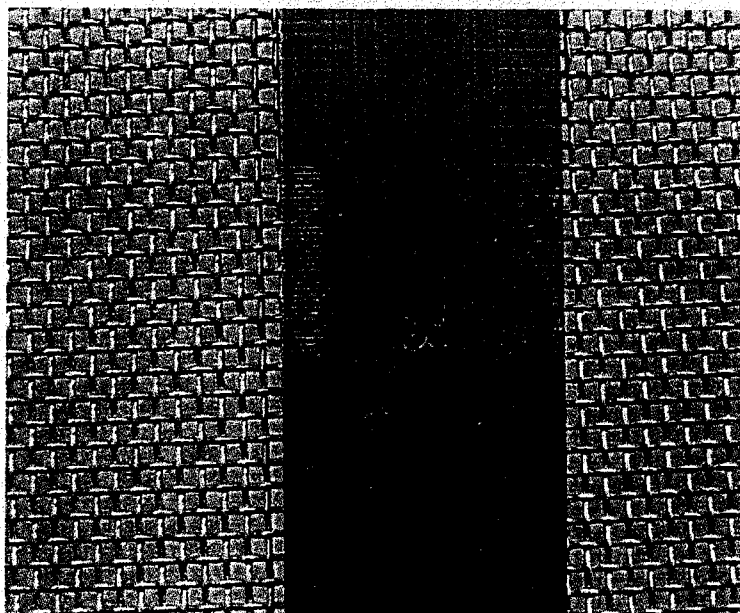
*N/A: Not Available; ** BP preferred filament fiber; *** Not all cross-link polymers are similar; **** Metamorphic ground marble CaCO₃ hardness 3 as per Mohs scale

M-I				Baroid				Baker			
Product	D10	D50	D90	Product	D10	D50	D90	Product	D10	D50	D90
Safecarb 2	0.3	3.8	10	Baracarb 5	0	5	20	Milcarb 5	1	5	15
Safecarb 20	1	20	90	Baracarb 25	2	25	70	Milcarb 25	2	25	100
Safecarb 40	2	40	110	Baracarb 50	3	50	120	Milcarb 50	3	50	120
Safecarb 250	50	250	450	Baracarb 150	60	150	300	Milcarb 150	20	150	350
Safecarb 500	240	500	710	Gap	N/A*	N/A*	N/A*	Milcarb 450	110	450	700
Safecarb 750	480	685	968	Baracarb 600	500	700	1000	Milcarb 600	570	944	1488
G-Seal Fine	5	30	90	Steelseal 100	10	78	81	LC Lube F	36	63	297
G-Seal Plus	60	200	600	Steelseal 400	160	400	650	LC Lube	172	358	503
G-Seal	130	300	600	Steelseal 1000	275	665	1020	Gap	N/A*	N/A*	N/A*
Barite	1.7	26	70	Barite	1.7	26	70	Barite	1.7	26	70

Note: LCM products from major service companies. Contact fluid CoP for additional LCM products.

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**Continuous Application
Sizing Screens to Return Particles**

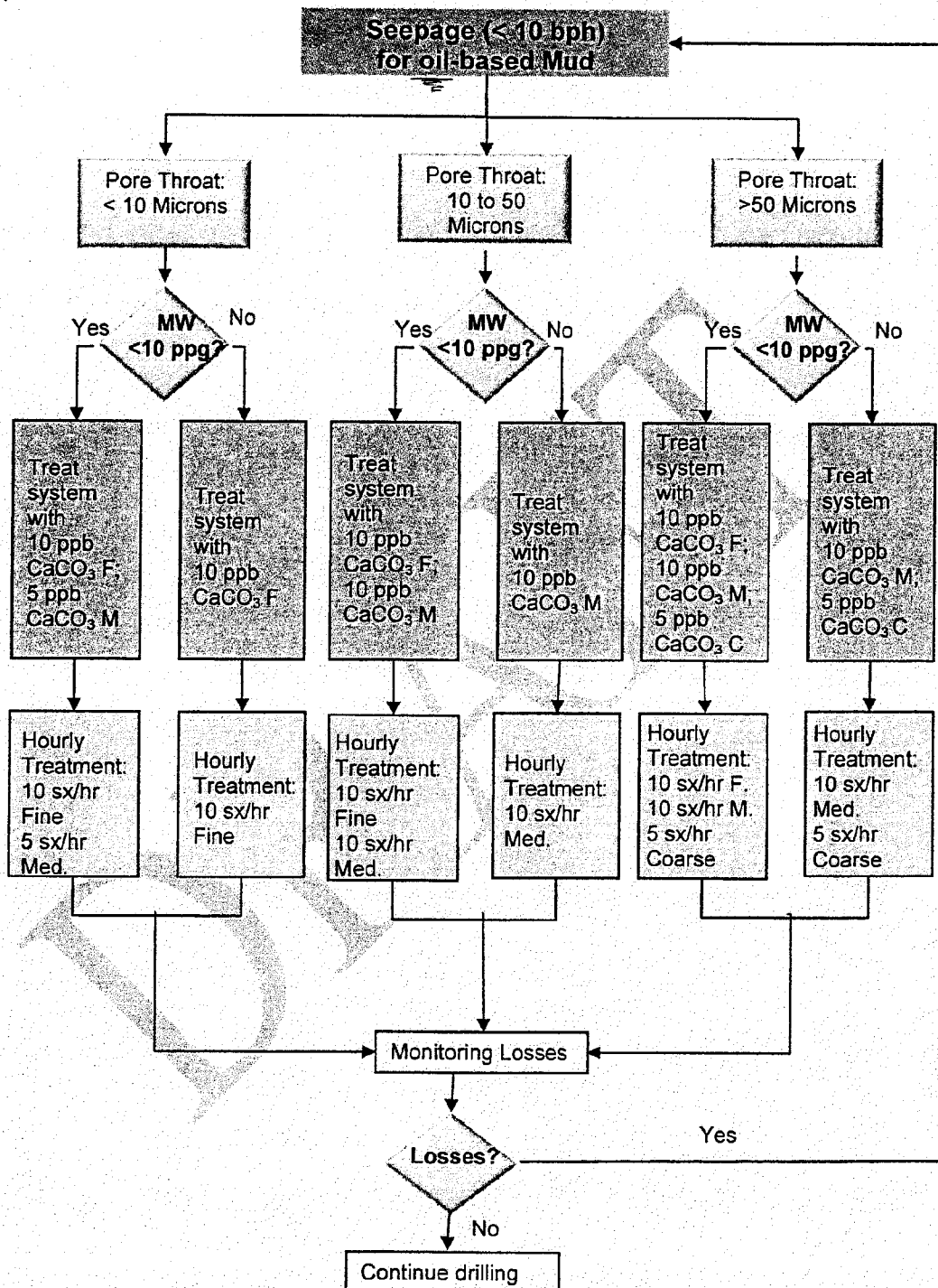


Mesh	Micron	Inches
4	4760	0.185
6	3360	0.131
8	2380	0.093
12	1680	0.065
16	1190	0.046
20	840	0.0328
30	590	0.0232
40	420	0.0164
50	297	0.0116
60	250	0.0097
70	210	0.0082
80	177	0.0069
100	149	0.0058
140	105	0.0041
200	74	0.0029
230	62	0.0023
270	53	0.0021
325	44	0.0017
400	37	0.0015
625	20	0.0008
1250	10	0.0004
2500	5	0.0002

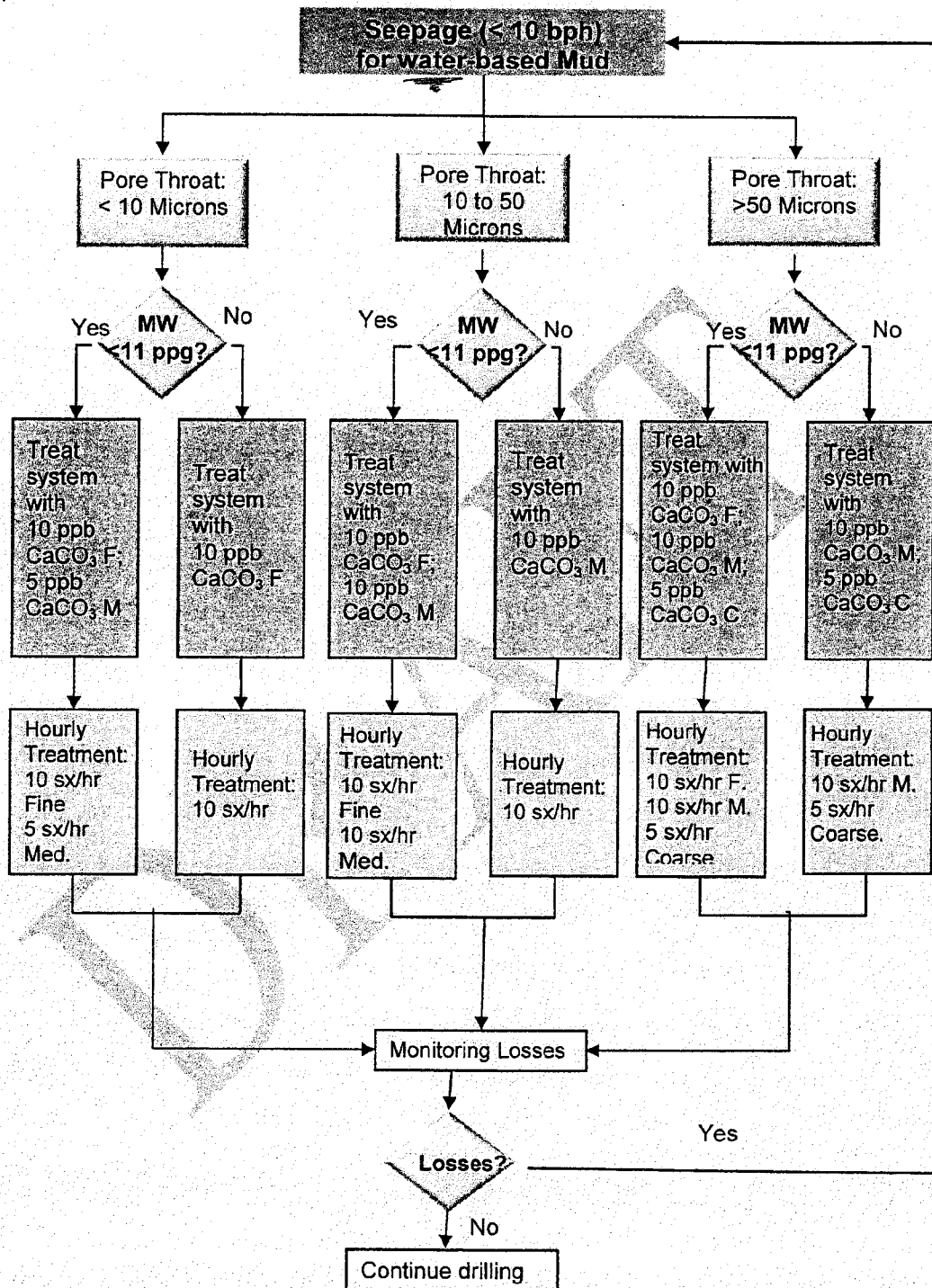
New API Specification

API Designation	D100 Separation (Microns)	API Designation	D100 Separation (Microns)
8	1168	100	149
18	1000	120	125
20	841	140	105
30	595	170	88
40	420	200	74
45	354	230	63
50	297	270	53
60	250	325	44
70	210	450	31
80	177	500	24

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Note: The LCM above is for OBM systems weighted up with barite. For clear brine fluids, the barite content will need to be replaced by sized CaCO₃. For Micronized barite systems, such as WARP, those containing Micromax, different recommendation may be required.



Note: The LCM above is for WBM systems weighted up with barite. For clear brine fluids, the barite content will need to be replaced by sized CaCO_3 . For Micronized barite systems, such as WARP, those containing Micromax, different recommendation may be required.



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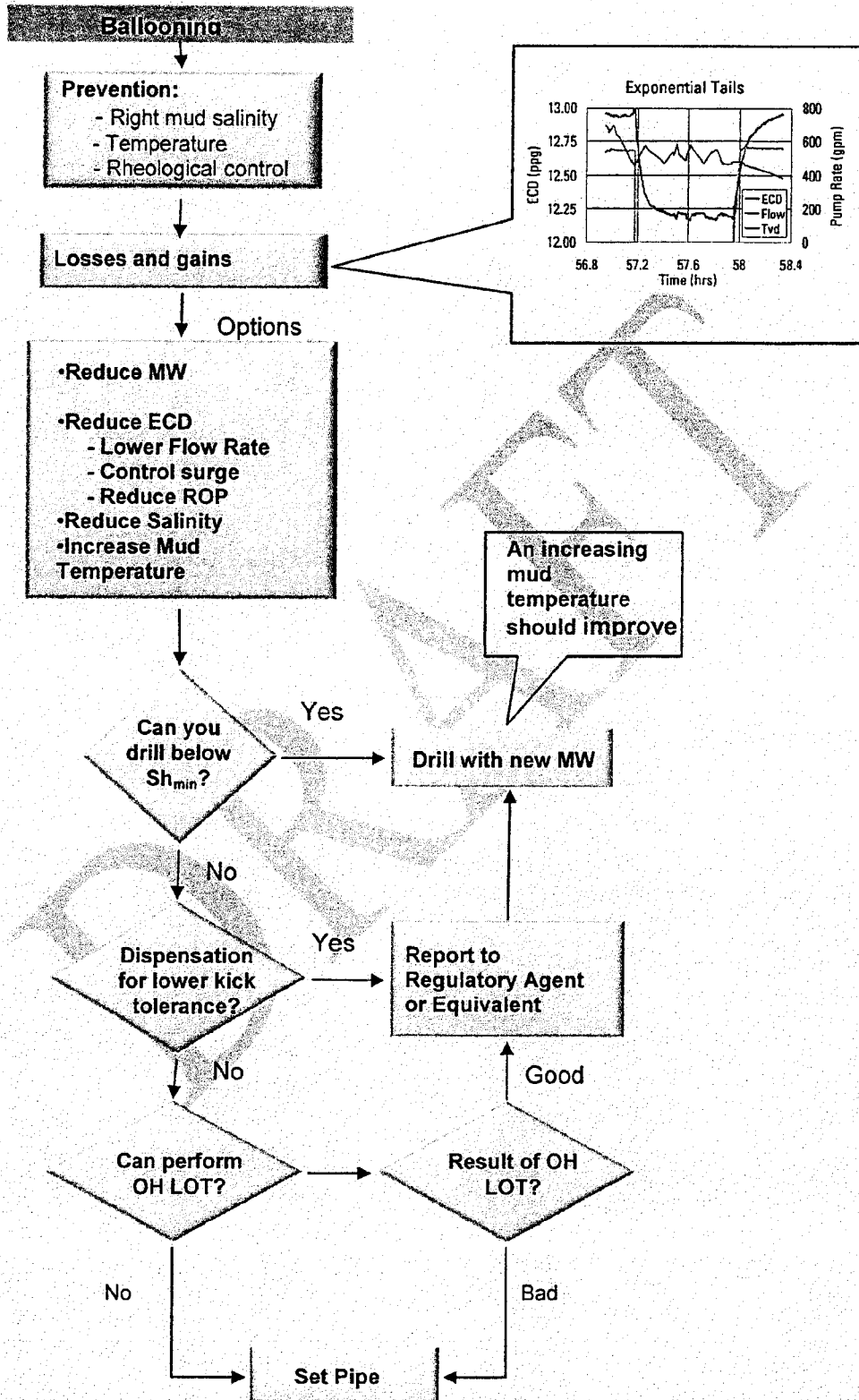
Ineffective isolation of the casing shoe

Cement

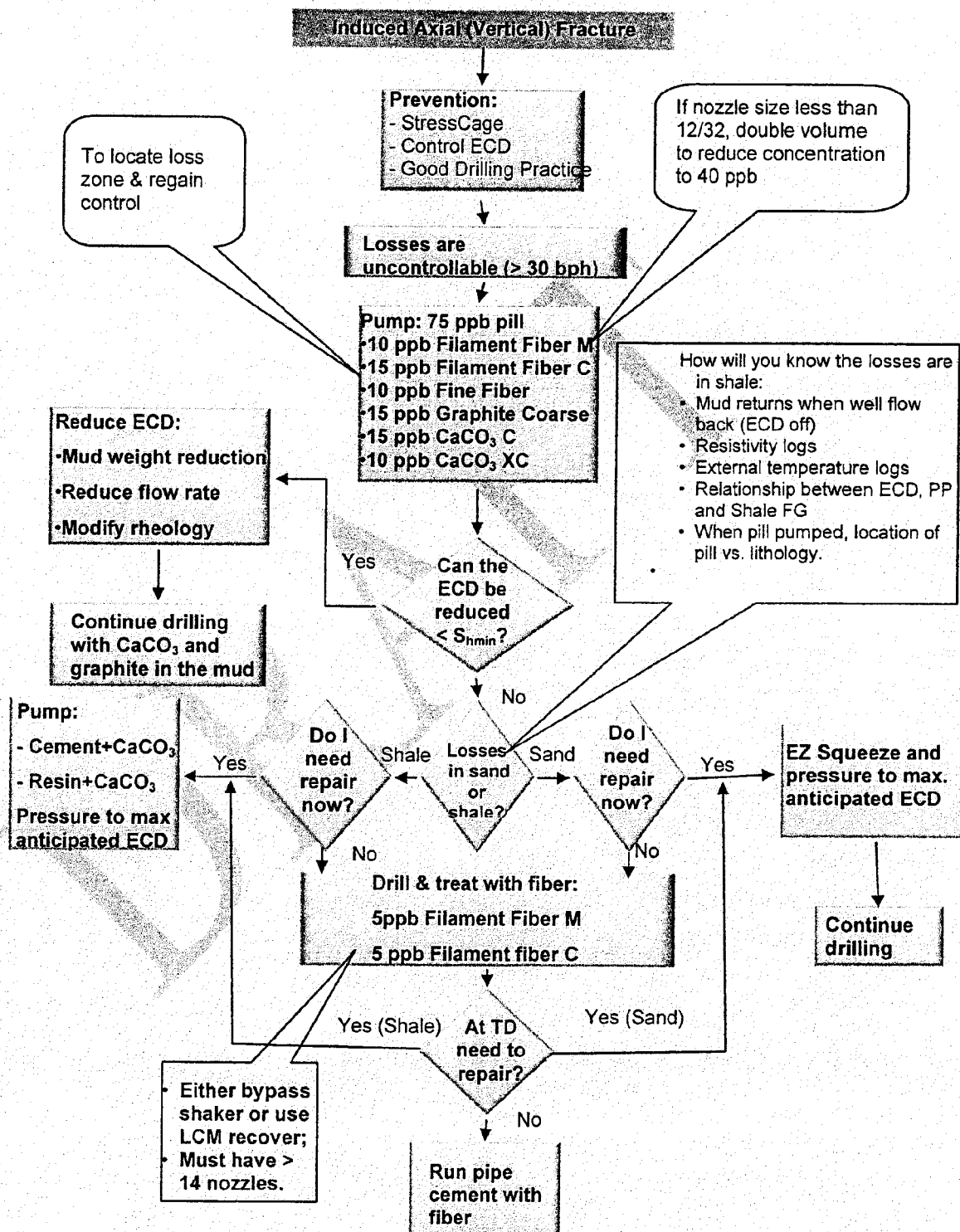
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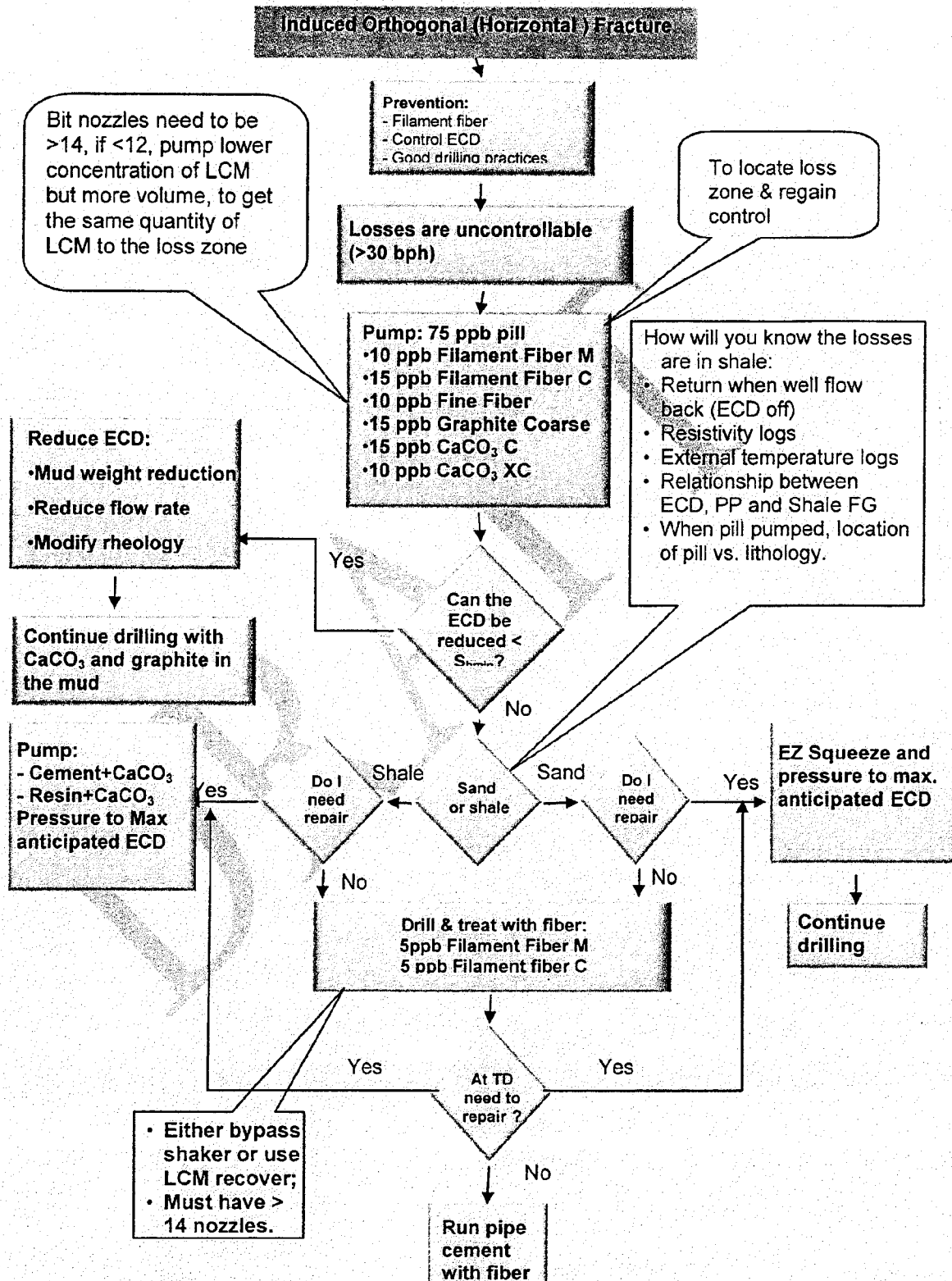
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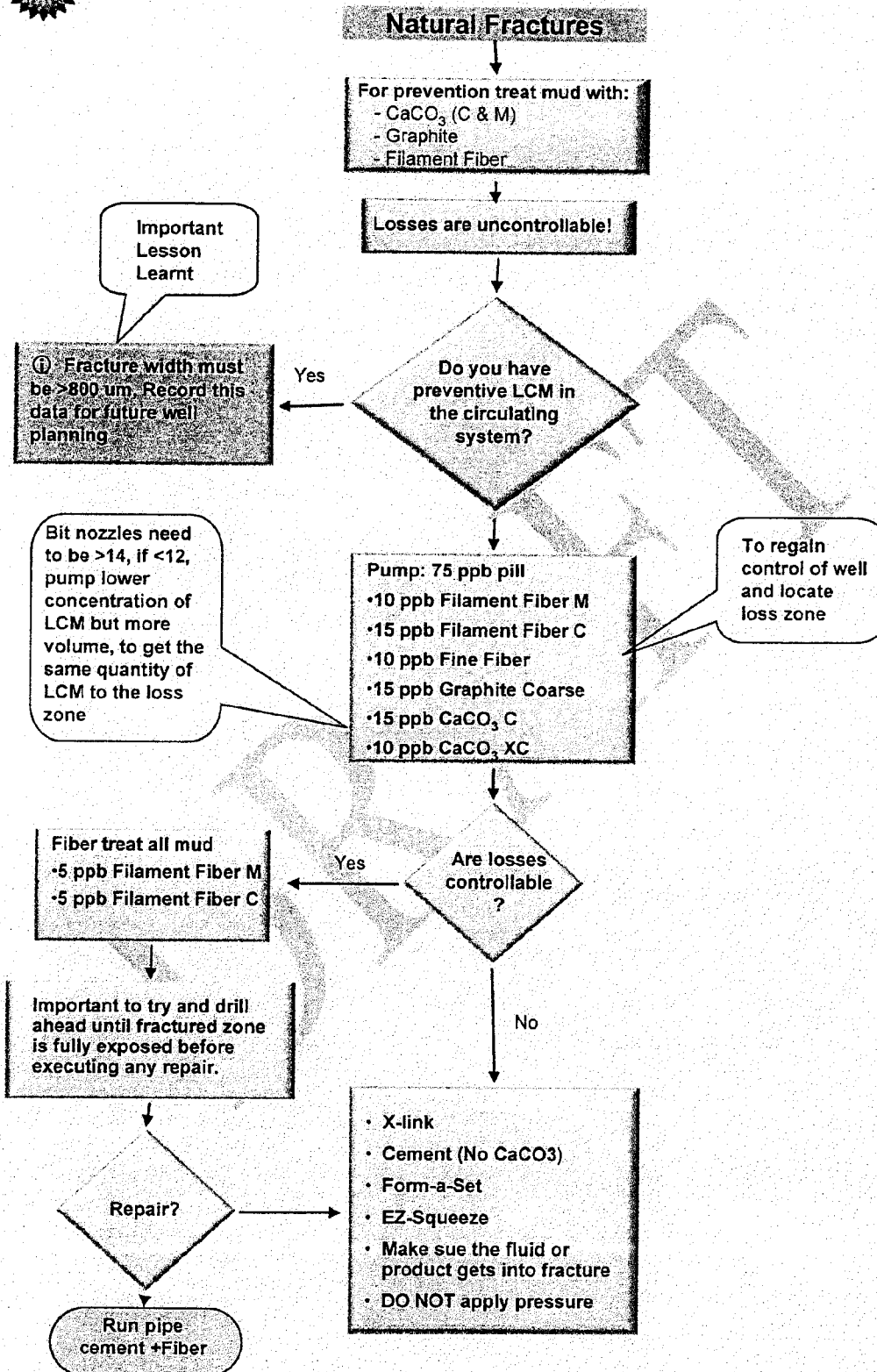
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Vugs

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Cement / TBD

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Hole in Casing

Cement

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