

PRODUCTION ENHANCEMENT SYSTEMS, LLC

LOST CIRCULATION AND SEEPAGE CONTROL PRODUCTS



"BEADLEJUICE" NEAUX LOSS

DESCRIPTION:

"BEADLEJUICE" NEAUX LOSS is a high solids, high fluid loss proprietary blended squeeze product designed to plug loss circulation zones with fine to medium fractures. "BEADLEJUICE" NEAUX LOSS is easily mixed with conventional rig equipment. "BEADLEJUICE" NEAUX LOSS will not contaminate existing mud and is neither time nor temperature sensitive. "BEADLEJUICE" NEAUX LOSS is designed to be used in water or oil based drilling fluids. "BEADLEJUICE" NEAUX LOSS produces a very thick, tough wall cake which resists washing away once drilling resumes. Normal quantities required for fresh water pills are 20-50 ppb.

TYPICAL PROPERTIES:

Appearance:	Fibrous black powder
pH 2% aqueous solution:	6.0
Dewatering performance A 20:	38*

SCREEN ANALYSIS:

U.S. MESH	% THRU
80	95
100	92
200	78

STANDARD PACKAGING:

25# bag, 50/pallet



"BEADLEJUICE" FIBER FLUID

FINE - MEDIUM - COARSE

DESCRIPTION:

"BEADLEJUICE" FIBER FLUID is an organic loss circulation material that prevents seepage loss and reduces torque and drag. It is an effective sealing and bridging material for depleted sands. It is available in fine, medium, and coarse grades. "BEADLEJUICE" FIBER FLUID is biodegradable.

TYPICAL PROPERTIES:

Appearance:	Granular tan material
Bulk density, lb/ft':	17.5 – 22.5

SCREEN ANALYSIS, TYPICAL (%):

U.S. MESH	FINE	MEDIUM	COARSE
4	0	0	0
20	0	0	33.5
60	1.6	24.0	41.6
80	4.5	53.1	7.6
100	5.1	13.2	2.5
200	54.0	6.6	6.6

STANDARD PACKING:

25# bag, 50/pallet



"BEADLEJUICE" FLAKE CALCIUM CARBONATE

FINE – MEDIUM – COARSE

DESCRIPTION:

"BEADLEJUICE" FLAKE CALCIUM CARBONATE is a unique proprietary flaked calcium carbonate effective in controlling seepage and circulation losses in completion and drilling fluids. It is available in Fine, Medium and Coarse grades.

TYPICAL PROPERTIES:

Appearance:	White flakes
Acid solubility, %:	98 – 99.5
Hygroscopic:	No

SCREEN ANALYSIS, TYPICAL (%):

U.S. MESH	FINE	MEDIUM	COARSE
4	0	0	0
8	0	0	39.1
12	0	0	27.9
16	0	0	33.0
20	0	24.0	
25	0	0	
30	1.5	0	
60	36.4	29.0	
100	35.8	41.0	
200	17.7	0	

STANDARD PACKAGING:

50# bag, 40/pallet



"BEADLEJUICE" CALCIUM CARBONATE POWDER BLEND

DESCRIPTION:

"BEADLEJUICE" CALCIUM CARBONATE POWDER BLEND is a sized calcium carbonate powder effective in controlling seepage and circulation losses in drilling and completion fluids. This product is custom blended in order to meet specific particle size distribution needs.

TYPICAL PROPERTIES:

Appearance:	White powder
Acid solubility, [°] A,	96 – 97.5
Hygroscopic	No

STANDARD PACKAGING:

50# bag, 40/pallet



"BEADLEJUICE" SEAL SELECT

DESCRIPTION:

"BEADLEJUICE" SEAL SELECT is a proprietary carbon based material which has been selectively sized to achieve optimum particle size distribution for plugging of down-hole porous formations. BEADLEJUICE" SEAL SELECT is thermally stable and non-expansive, has a neutral pH and does not adversely affect mud properties.

TYPICAL PROPERTIES:

Appearance	Granular gray/black material
Bulk density, lb/ft ³	52

SCREEN ANALYSIS, TYPICAL:

U.S. MESH	% RETAINED
30	0.0
60	53.7
100	30.8
200	14.4
325	0.5
Pan	0.5

STANDARD PACKAGING:

50# bag, 40/pallet



PRODUCTION ENHANCEMENT SYSTEMS, LLC TECHNICAL DATA SHEET "BEADLEJUICE" MULTI BLEND NEAUX LOSS F/S

DESCRIPTION:

"BEADLEJUICE" MULTI BLEND NEAUX LOSS is a proprietary, multi-blend product designed to plug loss circulation zones with fine to medium fractures. "BEADLEJUICE" MULTI BLEND NEAUX LOSS is easily mixed with conventional rig equipment. "BEADLEJUICE" MULTI BLEND NEAUX LOSS is designed to be used in water or oil based drilling fluids. "BEADLEJUICE" MULTI BLEND NEAUX LOSS produces a very thick, tough wallcake which resists washing away once drilling resumes. Normal quantities required are 15 – 30 ppb.

TYPICAL PROPERTIES:

Appearance: Greenish-black powder

SCREEN ANAYSIS, TYPICAL (%):

U.S. MESH	"BEADLEJUICE" MULTI BLEND NEAUX LOSS	COMPETITIVE
80	21.9	28.1
100	7.3	3.1
200	36.5	24.5
325	19.8	30.2
-325	14.6	17.7
RHEOLOGY, 15 PPS IN:		
PV	9	9
VP	7	5
API filtrate, ml	16.5	29.0
рН	6.6	6.4
PPT PERFORMANCE:		
Spurt loss, ml	12.5	19
PPT total, ml	41.0	50.6
*20 ppb in Xanthan/KCL mud,	250F, 500 psi, 150 micron core	

STANDARD PACKAGING:

25# bag, 50/pallet



"BEADLEJUICE" SEAL SELECT FINE – SUPER FINE

DESCRIPTION:

"BEADLEJUICE" SEAL SELECT is a proprietary carbon based material which has been selectively sized to achieve optimum particle size distribution for plugging of down-hole porous formations. "BEADLEJUICE" SEAL SELECT is thermally stable and non-expansive, has a neutral pH and does not adversely affect mud properties.

TYPICAL PROPERTIES:

Appearance:	Granular gray/black material
Bulk density, lb/ft ³ :	50 – 60

SCREEN ANALYSIS, TYPICAL (% RETAINED):

U.S. MESH	FINE	SUPER FINE
60	0.8	0.0
80	5.9	0.0
100	20.3	0.0
140	47.5	2.5
200	19.5	4.9
325	5.1	41.0
-325	0.9	51.6

STANDARD PACKAGING:

50# bag, 40/pallet



"BEADLEJUICE" NEAUX LOSS MAX

DESCRIPTION:

"BEADLEJUICE" NEAUX LOSS MAX is a proprietary, multi-blend product designed to plug loss circulation zones with fine to medium fractures. "BEADLEJUICE" NEAUX LOSS MAX is easily mixed with conventional rig equipment. "BEADLEJUICE" NEAUX LOSS MAX is designed to be used in water or oil based drilling fluids. "BEADLEJUICE" NEAUX LOSS MAX produces a very thick, tough wall cake which resists washing away once drilling resumes. Normal use quantities required are 5 – 30 ppb.

TYPICAL PROPERTIES:

Appearance:	Black powder
Compacted bulk density, lb/ft:	41
pH, 2% in water:	5 – 7

SCREEN ANALYSIS, TYPICAL:

U.S. MESH	% RETAINED
80	37.4
100	13.6
200	21.0
325	18.4
-325	9.5

STANDARD PACKAGING:

25# bag, 80/pallet



"BEADLEJUICE" GONE PECAN FINE – MEDIUM – COARSE

DESCRIPTION:

"BEADLEJUICE" GONE PECAN is a selectively sized pecan shell lost circulation material. "BEADLEJUICE" GONE PECAN is available in fine, medium, and coarse grades.

TYPICAL PROPERTIES:

Appearance:Granular nut shellMoisture, %:12 max

SCREEN ANALYSIS, TYPICAL (% RETAINED):

U.S. MESH	FINE	MEDIUM	COARSE
4	0	0	0
8	0	0	14.8
18	6.1	82.9	78.6
30	41.4	11.6	4.1
60	40.9	2.0	0.5
100	5.0	1.0	0.5

STANDARD PACKAGING:

50# bag, 50/pallet



PRODUCTION ENHANCEMENT SYSTEMS, LLC

TECHNICAL DATA SHEET

"BEADLEJUICE" KITCHEN SINK FINE – COARSE

DESCRIPTION:

"BEADLEJUICE" KITCHEN SINK is a blend of loss circulation materials such as fiber, cellophane, and shells. "BEADLEJUICE" KITCHEN SINK is available in fine and coarse grades.

TYPICAL PROPERTIES:

Appearance:	Blended granular and flaked material
Moisture, %:	12 max

SCREEN ANALYSIS, TYPICAL (% RETAINED):

U.S. MESH	FINE	COARSE
4	0.5	0.5
10	2.5	6.6
20	9.0	23.7
30	16.0	6.6
60	19.0	12.1
100	6.0	5.0

STANDARD PACKAGING:

40# bag, 50/pallet



"BEADLEJUICE" WALNUT SHELL FINE – MEDIUM – COARSE

DESCRIPTION:

"BEADLEJUICE" WALNUT SHELL is a selectively sized lost circulation additive. "BEADLEJUICE" WALNUT SHELL is available in fine, medium, and coarse grades.

TYPICAL PROPERTIES:

Appearance:Granular nut shellMoisture, %:12 max

SCREEN ANALYSIS, TYPICAL (% RETAINED):

U.S. MESH	FINE	MEDIUM	COARSE
4			0
6			0
10			36.5
12		0	18.6
14		0	10.2
16		36.4	2.9
18		48.0	28.2
20	13.9	8.0	2.1
25	27.4	7.6	.5
30	21.9		
40	23.9		

STANDARD PACKAGING:

50# bag, 50/pallet



"BEADLEJUICE" ACID SOLUBLE BRIDGE & SEAL

DESCRIPTION:

"BEADLEJUICE" ACID SOLUBLE BRIDGE & SEAL is a proprietary blend of acid soluble minerals and polymers designed to help bridge and seal a wide range of fracture sizes in a productive zone where acid solubility is required. "BEADLEJUICE" ACID SOLUBLE BRIDGE & SEAL is compatible in all completion fluids, from fresh water to bromide brines. Typical pill concentration is 80 – 100 ppb.

TYPICAL PROPERTIES:

Appearance:	Off-white powder
Specific gravity, g/ce:	2.56
Compacted bulk density, lb/ft:	91
Acid solubility, %:	94 minimum

STANDARD PACKAGING:

40 # bag, 50/pallet



"BEADLEJUICE" FIBER SEAL FINE – MEDIUM – COARSE

DESCRIPTION:

"BEADLEJUICE" FIBER SEAL is a blend of three fibers of various particle sizes and shapes designed to control seepage and loss circulation. The product is available in fine, medium, and coarse grades.

TYPICAL PROPERTIES:

Appearance:Blended fibersMoisture, %:10 max

PERMEABILITY PLUGGING PERFORMANCE:

PPT tests were performed on "BEADLEJUICE" FIBER SEAL fine, medium, coarse, and a blank, non-treated fluid at a 15 ppb concentration on multiple disks. These were tested at 250F and 1000 psi. The fluid in which it was tested was a standard Lignosulfonate mud.

PPT FILTRATE, ML:

MICRON	BLANK	FINE	MEDIUM	COARSE
35	24	19	25	22
90	35	22	30	23
150	No control	40	29	45

STANDARD PACKAGING:

25# bag, 50/pallet



"BEADLEJUICE" SQUEEZE

DESCRIPTION:

"BEADLEJUICE" SQUEEZE is a high solids, high fluid loss proprietary blend squeeze product designed to plug loss circulation zones with large fractures. "BEADLEJUICE" SQUEEZE is easily mixed with conventional rig equipment. "BEADLEJUICE" SQUEEZE will not contaminate existing mud and is neither time nor temperature sensitive. "BEADLEJUICE" SQUEEZE can be used for both water and oil-based drilling fluids. "BEADLEJUICE" SQUEEZE produces a very thick, tough cake which resists washing away once drilling resumes. Normal quantities required for fresh water pills are 25 – 75 ppb. When used in oil base drilling fluids, treatment rates are in the 15 – 30 ppb range. If used as a 100% oil pill, treatment rates are 25 – 75 ppb.

TYPICAL PROPERTIES:

Appearance:Fibrous tan powderpH, 2% aqueous solution:10 - 11

DEWATERING PERFORMANCE*

	UNTREATED	"BEADLEJUICE" SQUEEZE	PRODUCT A
Dewater 200 ml, sec.		43	79
Filter cake, mm		14	14
*50 ppb in fresh water, mix	ed 5 minutes on multi	-mixer	

PPT PERFORMANCE (OIL BASED MUD)**

Spurt loss, ml***	8.0	9.0	79
30 min. filtrate, ml x2	80.8	30.0	32.0

**12.1 ppg invert emulsion mud / 90 micron ceramic disk / 900 psi differential / 250 F / Field mud treated 25 ppb test product ("BEADLEJUICE" SQUEEZE or Product A).

***Lower spurt loss indicates more effective and timely sealing.

STANDARD PACKAGING:

40# bag, 40/pallet



"BEADLEJUICE" BIG SQUEEZE

DESCRIPTION:

"BEADLEJUICE" BIG SQUEEZE is a high solids, high fluid loss proprietary blend squeeze product designed to plug loss circulation zones with large zones with large fractures. "BEADLEJUICE" BIG SQUEEZE is easily mixed with conventional rig equipment. "BEADLEJUICE" BIG SQUEEZE will not contaminate existing mud and is neither time nor temperature sensitive. "BEADLEJUICE" BIG SQUEEZE is designed to be used in water based drilling fluids. "BEADLEJUICE" BIG SQUEEZE produces a very thick, tough cake which resists washing away once drilling resumes. "BEADLEJUICE" BIG SQUEEZE contains an expandable polymer that continues to swell after placement in the loss circulation zone to fill all voids. Normal quantities required for fresh water pills are 50 – 80 ppb.

TYPICAL PROPERTIES:

Appearance:	Fibrous tan powder
pH, 2% aqueous solution:	10 - 11

DEWATERING PERFORMANCE:

РРВ	DEWATER 200 ML (SEC.)
64	240
80	363

STANDARD PACKING:

40# bag, 50/ pallet



"BEADLEJUICE" MASTER PLUG

DESCRIPTION:

"BEADLEJUICE" MASTER PLUG is a proprietary, multi-blend, one-sack plugging agent designed to solve the most difficult lost circulation problems. "BEADLEJUICE" MASTER PLUG'S wide particle size distribution and chemical formulation offers both water and oil dispersible properties. Pills prepared with "BEADLEJUICE" MASTER PLUG are easily mixed and pumped and dewater quickly once squeeze pressure is applied to the lost circulation zone.

TYPICAL PROPERTIES:

Appearance:	Black powder
pH, 2% in water:	10 - 11.5
Compacted bulk density, lb/f	t ³ 1 35 – 40

SCREEN ANALYSIS, TYPICAL:

U.S. MESH	% RETAINED
30	8
60	25
100	15
200	35
325	12
-325	5

ADVANTAGES:

One-sack blend easily mixed thru mud hopper Self-suspending – can be mixed and stored before use Broad PSD range and type of particle to bridge and plug Easily dewaters to form instant plug Non-damaging and non-toxic

STANDARD PACKAGING:

40# bag, 50/pallet



PRODUCTION ENHANCEMENT SYSTEMS, LLC TECHNICAL DATA SHEET "BEADLEJUICE" ENVIRO SEAL

DESCRIPTION:

"BEADLEJUICE" ENVIRO SEAL is a proprietary blended product that contains environmentally and rheological safe plugging agents designed for seepage and loss circulation control. "BEADLEJUICE" ENVIRO SEAL can be prepared in pills containing 10 – 40 ppb for major losses or used as a seepage control agent at 4 – 10 ppb. "BEADLEJUICE" ENVIRO SEAL pills remain pumpable as viscosity is not dependent upon cross linking.

TYPICAL PROPERTIES:

	_ / .
Appearance:	Brown/green powder
API filtrate (ii, 25 lb/bbl in water:	33 ml
250 micron disk, spurt loss, nil:	12.5
Permeability plugging test	
30 min filtrate, ml:	16.0
Ash content, %:	16.4

SCREEN ANALYSIS, TYPICAL:

U.S. MESH	% RETAINED
20	32.5
40	20.1
60	8.2
80	6.2
100	4.1
200	13.4
-200	15.5

STANDARD PACKAGING:

25# bag, 48/pallet



PRODUCTION ENHANCEMENT SYSTEMS, LLC TECHNICAL DATA SHEET "BEADLEJUICE" MICA MEDIUM

DESCRIPTION:

"BEADLEJUICE" MICA MEDIUM is a highly purified muscovite plate structured mica product that helps seal underground fractures from fine openings to vugular or cavernous openings. Mica is also stable when exposed to electricity, light, moisture and extreme temperatures.

TYPICAL PROPERTIES:

Appearance:	Gray to tan platelets
Specific Gravity, g/cc:	2.75
Moisture:	<7

SCREEN ANALYSIS, TYPICAL:

U.S. MESH	5 (4MM)	10	30	60	80	100 (150)
%RETAINED	0	25 – 35	40 - 60	5 – 20	< 10	0

TREATMENT RATE, TYPICAL:

Concentration, ppb: 20 – 60



PRODUCTION ENHANCEMENT SYSTEMS, LLC TECHNICAL DATA SHEET "BEADLEJUICE" MICA FINE

DESCRIPTION:

"BEADLEJUICE" MICA FINE is a highly purified muscovite plate structured mica product that helps seal underground fractures from fine openings to vugular or cavernous openings. Mica is also stable when exposed to electricity, light, moisture and extreme temperatures.

TYPICAL PROPERTIES:

Appearance:	Gray to tan platelets
Specific Gravity, g/cc:	2.75
Moisture:	<7

SCREEN ANALYSIS, TYPICAL:

U.S. MESH	20 (850)	30	60	80	100 (150)
%RETAINED	0	5 – 25	30 – 50	5 – 25	1 – 15

TREATMENT RATE, TYPICAL:

Concentration, ppb: 20 – 60



PRODUCTION ENHANCEMENT SYSTEMS, LLC TECHNICAL DATA SHEET "BEADLEJUICE" PREMIUM SQUEEZE

DESCRIPTION:

"BEADLEJUICE" PREMIUM SQUEEZE is a high fluid loss squeeze designed to plug fine to medium size pores. The squeeze can be prepared in either water or oil base pills depending on the fluid being used to drill. "BEADLEJUICE" PREMIUM SQUEEZE can be weighted up to 18 ppg.

TYPICAL PROPERTIES:

Appearance:	Black powder
pH, 2% in water:	12.1
Bulk density, lb/ft ³ :	40
Moisture, %:	5.00 Max.

SCREEN ANALYSIS, TYPICAL:

U.S. MESH	80	100	200	325	-325
%RETAINED	28.1	5.2	20.8	19.8	26.0

TREATMENT RATE, TYPICAL:

Pill (un-weighted), ppb: 80 - 100



PRODUCTION ENHANCEMENT SYSTEMS, LLC

TECHNICAL DATA SHEET

"BEADLEJUICE" SLIDE & SEAL

DESCRIPTION:

"BEADLEJUICE" SLIDE & SEAL is a mulit-purpose drilling fluid additive for providing lubricity in extended reach drilling and lost circulation control in low fracture gradient environments. "BEADLEJUICE" SLIDE & SEAL is an environmentally advanced concept developed from recycled products. With a lower specific gravity than other LCM's, "BEADLEJUICE" SLIDE & SEAL yields more volume of product at lower concentrations.

TYPICAL PROPERTIES:

Appearance:	Black and "spongy" feel
Particle Size:	1 - 420
Temperature Tolerance, ^o F:	Stable up to 500
Specific Gravity:	1.0 - 1.2

SCREEN ANALYSIS, TYPICAL:

U.S. MESH	40 / 420	50 / 297	80 / 177	100 / 149	Pan/-
Passing Thru, %	93.5	53.4	20.9	8.2	3.6

APPLICATION / FUNCTION:

Sealing fractures in low-fracture environments	Control of seepage losses
Reducing torque and drag	Reduction of wear on drill pipe and casing
Lower density improves performance in shallow water flows	For use in Water Based and Invert Emulsion Systems

TREATMENT RATE:

Typical, ppb*	1 – 5 for seepage loss; up to 25 pill for severe losses	
Inverts	"BEADLEJUICE" SLIDE & SEAL is readily mixed in inverts of all types	
Water-based	A coupler is recommended. A surfactant based defoamer may be sufficient	
Lubricity	"BEADLEJUICE" SLIDE & SEAL will perform as a solid lubricant in WBM and Inverts. Lubricity in WBM will be enhanced when oil and "BEADLEJUICE" SLIDE & SEAL are premixed. The hydrophilic nature of "BEADLEJUICE" SLIDE & SEAL allows for the oil to remain external on the particles and aid in lubricity between the drill pipe and casing.	