

APPENDIX K SSRP CSTR Processed Data

Blank (no Molten Sulfur, no catalyst)

	BLR01		1.5 LPM		155°C		0% W		G		G+S		S	
	In (ppm)		Out (ppm)											
	P (psig)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%					
-SO2	200	8000		7970		0.4		30	0.4					
+SO2	200	8000	5450	7515	5360	6.1	1.7	305	4.3					
+SO2	200	8200	4850	7730	4785	5.7	1.3	340	4.1					
+SO2	200	8320	4360	7940	4300	4.6	1.4	260	3.5					
+SO2	200	8450	3920	8140	3870	3.7	1.3	210	2.9					
+Coal Gas	200	8640	3270	8390	3250	2.9	0.6	210	2.3					
-Coal Gas	200		3280		3280		0.0	0	0.0					
						COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)				
-SO2						5	8000	7975	25	0.3				
+SO2						165	13450	13040	410	3.0				
+SO2						175	13050	12690	360	2.8				
+SO2						180	12680	12420	260	2.1				
+SO2						180	12370	12190	180	1.5				
+Coal Gas						180	11910	11820	90	0.8				
-Coal Gas						0	3280	3280	0	0.0				

	BLR02		1.5 LPM		155°C		0% W		G		G+S		S	
	In (ppm)		Out (ppm)											
	P (psig)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%					
-SO2	200	6400		6308		1.4		92	1.4					
+SO2	200	6400	8300	5670	8283	11.4	0.2	696	5.1					
+SO2	200	6400	7500	6100	7493	4.7	0.1	286	2.2					
+Coal Gas	250	2700	6100	2035	4700	24.6	23.0	-2135	23.5					
-Coal Gas	250		6100		6083		0.3	-34	0.3					
						COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)				
-SO2						60	6400	6368	32	0.5				
+SO2						270	14700	14223	477	3.2				
+SO2						260	13900	13853	47	0.3				
+Coal Gas						275	8800	7010	1790	20.3				
-Coal Gas						0	6100	6083	17	0.3				

	BLR03		1.5 LPM		155°C		0/10% W		G		G+S		G+S+W		S+W	
	In (ppm)		Out (ppm)													
	H2O	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%							
-SO2	0%	8350		8318		0.4		32	0.4							
+SO2	0%	8350	4800	8038	4637	3.7	3.4	-14	3.6							
+W	10%	8350	4800	4075	2371	51.2	50.6	-583	51.0							
S+W	10%		4800		4838		-0.8	76	-0.8							
						COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)						
-SO2						14	8350	8332	18	0.2						
+SO2						73	13150	12748	402	3.1						
+W						56	13150	6502	6648	50.6						
S+W						0	4800	4838	-38	-0.8						

Molten Sulfur + E-alumina

TST02		1.0 LPM	155°C	0% W	S	S+G				
		In (ppm)			Out (ppm)					
	H2O	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%	
-Coal Gas	0%	0	4600	0	4600		0.0	0	0.0	
+Coal Gas	0%	8500	4600	324	755	96.2	83.6	486	91.8	
						COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
-Coal Gas						0	4600	4600	0	0.0
+Coal Gas						767	13100	1846	11254	85.9

TST03		1.0 LPM	155°C	10% W	S	S+W	S+W+G			
		In (ppm)			Out (ppm)					
RPM	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%		
	0	3800	0	3784		0.4	-32	0.4		
500	8500	3800	615	765	92.8	79.9	1815	88.8		
750	8500	3800	562	711	93.4	81.3	1760	89.7		
1000	8500	3800	454	707	94.7	81.4	1860	90.6		
1250	8500	3800	448	698	94.7	81.6	1848	90.7		
1500	8500	3800	470	684	94.5	82.0	1798	90.6		
RPM					COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)	
					0	3800	3784	16	0.4	
500					780	12300	2160	10140	82.4	
750					824	12300	2097	10203	83.0	
1000					829	12300	1990	10310	83.8	
1250					822	12300	1968	10332	84.0	
1500					843	12300	1997	10303	83.8	

TST04		300psig	155°C	10% W	W	W+(S+G)				
		In (ppm)			Out (ppm)					
F (SLPM)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%		
1.0	8500	4600	140	1050	98.4	77.2	1260	90.9		
0.5	8500	4600	80	700	99.1	84.8	620	94.0		
F (SLPM)					COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)	
1.0					745	13100	1935	11165	85.2	
0.5					950	13100	1730	11370	86.8	

TST05		1.0 LPM	155°C	10% W	W	W+(S+G)				
		In (ppm)			Out (ppm)					
P (psig)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%		
375	8500	4600	135	350	98.4	92.4	-135	96.3		
350	8500	4600	145	370	98.3	92.0	-105	96.1		
300	8500	4600	190	430	97.8	90.7	-30	95.3		
250	8500	4600	200	640	97.6	86.1	380	93.6		
250	8500	0	8500	0	0.0		0			
P (psig)					COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)	
375					630	13100	1115	11985	91.5	
350					625	13100	1140	11960	91.3	
300					550	13100	1170	11930	91.1	
250					530	13100	1370	11730	89.5	
250					800	8500	9300	-800	-9.4	

Molten Sulfur + E-alumina

EAL01 1.0 LPM 155°C 10% W 300psig S+W+G
 In (ppm) Out (ppm)

	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%	
-Coal Gas		4700	0	4674		0.6	-52	0.6	
+Coal Gas	8100	4700	76	1546	99.1	67.1	1716	87.3	
+Coal Gas	8400	4000	175	964	97.9	75.9	2153	90.8	
+Coal Gas	8600	3500	408	495	95.3	85.9	2182	92.5	
-Coal Gas		3500	4	3485		0.4	-34	0.3	
					COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
-Coal Gas					0	4700	4674	26	0.6
+Coal Gas					473	12800	2095	10705	83.6
+Coal Gas					517	12400	1656	10744	86.6
+Coal Gas					573	12100	1476	10624	87.8
-Coal Gas					4	3500	3493	7	0.2

EAL02 300psig 155°C 10% W W+S+G
 In (ppm) Out (ppm)

F (SLPM)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%	
1.0		3900	0	3898		0.1	-4	0.1	
1.0	8400	3900	121	1063	98.6	72.7	2605	90.4	
2.0	8400	3900	186	1187	97.8	69.6	2788	88.8	
3.0	8400	3900	417	1238	95.0	68.3	2659	86.5	
					COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
1.0					0	3900	3898	2	0.1
1.0					643	12300	1827	10473	85.1
2.0					410	12300	1783	10517	85.5
3.0					267	12300	1922	10378	84.4

EAL03 2.8 LPM 155°C 10% W W+S+G
 In (ppm) Out (ppm)

P(psig)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%	
300		4550	5	4554		-0.1	3	-0.2	
300	8200	4550	485	1120	94.1	75.4	855	87.4	
350	8400	4500	389	911	93.9	81.3	833	89.9	
400	8800	4400	429	739	95.1	83.2	1049	91.2	
300	8800	4400	647	867	92.6	80.3	1087	88.5	
275	8800	4400	747	890	91.5	79.8	1033	87.6	
250 + SO2	8800	4400	785	927	91.1	78.9	1069	87.0	
250 - SO2	8800		8350	0	5.1		450		
					COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
300					0	4550	4559	-9	-0.2
300					301	12750	1906	10844	85.1
350					325	12900	1625	11275	87.4
400					344	13200	1512	11688	88.5
300					317	13200	1831	11369	86.1
275					290	13200	1927	11273	85.4
250 + SO2					290	13200	2002	11198	84.8
250 - SO2					410	8800	8760	40	0.5

EAL04 2.8 LPM 350psig 10% W W+S+G

		In (ppm)		Out (ppm)					
T(°C)		H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%
155			4400	6	4371		0.7	-64	0.5
155		8250	4400	327	1503	96.0	65.8	2129	85.5
140		8350	4150	373	1168	94.0	73.4	2013	87.7
125	+ SO2	8450	3900	537	857	93.6	78.0	1827	88.7
125	- SO2	8450		8355	0	1.1		95	
T(°C)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)	
155				0	4400	4377	23	0.5	
155				330	12650	2160	10490	82.9	
140				193	12500	1734	10766	86.1	
125	+ SO2			95	12350	1489	10861	87.9	
125	- SO2			85	8450	8440	10	0.1	

EAL05 300psig 125°C 2.3 LPM W+(S+G)

		In (ppm)		Out (ppm)					
H2O (%)		H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%
10.0		8480	3800	833	313	90.2	91.8	673	90.7
14.3		8480	3800	823	342	90.3	91.0	741	90.5
18.2		8480	3800	810	357	90.4	90.6	784	90.5
H2O (%)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)	
10.0				115	12280	1261	11019	89.7	
14.3				93	12280	1258	11022	89.8	
18.2				74	12280	1241	11039	89.9	

EAL06 2.8 LPM 155°C 10% W W+S+G

		In (ppm)		Out (ppm)					
P(psig)	H2O (%)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%
270	10%	7900		7805		1.2	#DIV/0!	95	1.2
250	15%	7900		7763		1.7	#DIV/0!	137	1.7
220	10%	7900		7775		1.6	#DIV/0!	125	1.6
P(psig)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)	
270				112	7900	7917	-17	-0.2	
250				63	7900	7826	74	0.9	
220				41	7900	7816	84	1.1	

Molten Sulfur only (no catalyst)

MS01		300psig	155°C	W+G						
		In (ppm)		Out (ppm)						
F (SLPM)	H2O (%)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%	
1.0	10	9000		8397		6.7		603	6.7	
2.0	10	9000		8501		5.5		499	5.5	
3.0	10	9000		8453		6.1		547	6.1	
4.0	10	9000		8556		4.9		444	4.9	
1.0	10.0	9000		8397		6.7		603	6.7	
1.0	10.0	9000		8459		6.0		541	6.0	
1.1	18.2	9000		8384		6.8		616	6.8	
1.3	30.8	9000		8657		3.8		343	3.8	
F (SLPM)	H2O (%)					COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
1.0	10					521	9000	8918	82	0.9
2.0	10					256	9000	8757	243	2.7
3.0	10					159	9000	8612	388	4.3
4.0	10					115	9000	8671	329	3.7
1.0	10.0					521	9000	8918	82	0.9
1.0	10.0					520	9000	8979	21	0.2
1.1	18.2					460	9000	8844	156	1.7
1.3	30.8					418	9000	9075	-75	-0.8

MS02		300psig	155°C	10% W	W+G+S					
		In (ppm)		Out (ppm)						
F (SLPM)	H2O (%)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%	
1.0	10	9000		8388		6.8		612	6.8	
1.0	10	9000	4400	822	123	90.9	97.2	-376	92.9	
2.0	10	9000	4400	1056	647	88.3	85.3	438	87.3	
3.0	10	9000	4400	1249	883	86.1	79.9	717	84.1	
1.0	10.0	9000	4400	822	123	90.9	97.2	-376	92.9	
1.2	25.0	9000	4400	984	17	89.1	99.6	-750	92.5	
F (SLPM)	H2O (%)					COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
1.0	10					664	9000	9052	-52	-0.6
1.0	10					831	13400	1776	11624	86.7
2.0	10					421	13400	2124	11276	84.1
3.0	10					255	13400	2387	11013	82.2
1.0	10.0					830	13400	1775	11625	86.8
1.2	25.0					620	13400	1621	11779	87.9

MS03		300psig	155°C	10% W	2.0 SLPM	W+G+S						
		In (ppm)		Out (ppm)								
		H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%			
		8500		8036		5.5		464	5.5			
		5667		5293		6.6		374	6.6			
		4250		4081		4.0		169	4.0			
		8500		8127		4.4		373	4.4			
-SO2		8500		8127		4.4		373				
+SO2		8500	4330	639	576	92.5	86.7	353	90.5			
			4330		4323		0.2	-14	0.2			
		H2S (ppm)	SO2 (ppm)					COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
		8500						395	8500	8431	69	0.8
		5667						215	5667	5508	159	2.8
		4250						157	4250	4238	12	0.3
		8500						385	8500	8512	-12	-0.1
-SO2		8500						385	8500	8512	-12	-0.1
+SO2		8500	4330					475	12830	1690	11140	86.8
			4330					6	4330	4329	1	0.0

MS04		300psig	155°C		W+S		W+S+G			
		In (ppm)			Out (ppm)					
F (SLPM)	H2O (%)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%	
2.0	10.0		4400	4	4384		0.4	-36	0.3	
1.7	11.8	7140	5240	237	2068	96.7	60.5	559	81.4	
1.8	16.7	6740	4940	258	2159	96.2	56.3	920	79.3	
1.9	21.1	6380	4680	295	2071	95.4	55.7	867	78.6	
Rs (RPM)	H2O (%)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%	
1500	21.1	6380	4680	272	1833	95.7	60.8	414	81.0	
1000	21.1	6380	4680	295	2071	95.4	55.7	867	78.6	
750	21.1	6380	4680	250	1773	96.1	62.1	316	81.7	
500	21.1	6380	4680	253	2013	96.0	57.0	793	79.5	
F (SLPM)	H2O (%)					COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
2.0	10.0					0	4400	4388	12	0.3
1.7	11.8					530	12380	2835	9545	77.1
1.8	16.7					475	11680	2892	8788	75.2
1.9	21.1					482	11060	2848	8212	74.2
Rs (RPM)	H2O (%)					COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
1500	21.1					495	11060	2600	8460	76.5
1000	21.1					482	11060	2848	8212	74.2
750	21.1					485	11060	2508	8552	77.3
500	21.1					481	11060	2747	8313	75.2

MS05		300psig	155°C		W+(S+G)					
		In (ppm)			Out (ppm)					
Feed	F (SLPM)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%	
+SO2	1.8	7500	5000	193	2937	97.4	41.3	3181	75.0	
-SO2	1.8	7500		6909		7.9		591		
-SO2	2.2	9330		8844		5.2		486		
+SO2	2.2	9330	4000	1014	383	89.1	90.4	1082	89.5	
Feed	F (SLPM)					COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
+SO2	1.8					660	12500	3790	8710	69.7
-SO2	1.8					585	7500	7494	6	0.1
-SO2	2.2					480	9330	9324	6	0.1
+SO2	2.2					535	13330	1932	11398	85.5

MS06		300psig	10% W		W+S+G					
		In (ppm)			Out (ppm)					
T (°C)	F (SLPM)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%	
155	2.2		4000		3997		0.1	-6		
155	2.0	8500	4380	1318	790	84.5	82.0	2	83.6	
145	2.0	8500	4380	1427	876	83.2	80.0	65	82.1	
136	2.0	8500	4380	1493	989	82.4	77.4	225	80.7	
128	2.0	8500	4380	1591	1018	81.3	76.8	185	79.7	
T (°C)					COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)	
155					0	4000	3997	3	0.1	
155					493	12880	2601	10279	79.8	
145					305	12880	2608	10272	79.8	
136					275	12880	2757	10123	78.6	
128					167	12880	2776	10104	78.4	

Molten Sulfur + Double Load of E-alumina

DAL02		300psig	155°C	10% W	W+S	W+S+G					
F (SLPM)		In (ppm)			Out (ppm)						
	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%			
1.0		3200		3197		0.1	-6				
1.0	7500	3200	186	787	97.5	75.4	2488	90.9			
F (SLPM)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)			
1.0				0	3200	3197	3	0.1			
1.0				783	10700	1756	8944	83.6			

DAL03		300psig	155°C		W+S	W+S+G					
F (SLPM)		In (ppm)			Out (ppm)						
	H2O (%)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%		
1.0	10.0		3640		3637		0.1	-6			
1.0	10.0	8500	3640	334	506	96.1	86.1	1898	93.1		
1.1	18.2	8500	3640	434	350	94.9	90.4	1486	93.5		
1.0	10.0	8500	3640	334	506	96.1	86.1	1898	93.1		
2.0	10.0	8500	3640	493	789	94.2	78.3	2305	89.4		
RPM											
2.0	1000	8500	3640	493	789	94.2	78.3	2305	89.4		
2.0	750	8500	3640	526	780	93.8	78.6	2254	89.2		
F (SLPM)	H2O (%)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)		
1.0	10.0				0	3640	3637	3	0.1		
1.0	10.0				953	12140	1793	10347	85.2		
1.1	18.2				709	12140	1493	10647	87.7		
1.0	10.0				953	12140	1793	10347	85.2		
2.0	10.0				541	12140	1823	10317	85.0		
RPM											
2.0	1000				541	12140	1823	10317	85.0		
2.0	750				554	12140	1860	10280	84.7		

DAL04		300psig	155°C		W+S	W+S+G					
F (SLPM)		In (ppm)			Out (ppm)						
	H2O (%)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%		
2.0	10.0		4040		4039		0.0	-2			
2.0	10.0	8500	4040	404	597	95.2	85.2	1210	92.0		
1.0	10.0	8500	4040	498	61	94.1	98.5	44	95.5		
1.1	18.2	8500	4040	380	143	95.5	96.5	326	95.8		
1.2	25.0	8500	4040	475	91	94.4	97.7	127	95.5		
F (SLPM)	H2O (%)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)		
2.0	10.0				0	4040	4039	1	0.0		
2.0	10.0				576	12540	1577	10963	87.4		
1.0	10.0				629	12540	1188	11352	90.5		
1.1	18.2				655	12540	1178	11362	90.6		
1.2	25.0				536	12540	1102	11438	91.2		

DAL05 10% H2O 155°C 2 SLPM W+S W+S+G
 In (ppm) Out (ppm)

P (psig)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%
300		3300		3299		0.0	-2	
300	8500	3300	347	113	95.9	96.6	1779	96.1
350	8500	3300	453	16	94.7	99.5	1479	96.0
350	8500	3300	438	14	94.8	99.6	1490	96.2
400	8500	3300	664	0	92.2	100.0	1236	94.4
P (psig)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
300				0	3300	3299	1	0.0
300				567	11800	1027	10773	91.3
350				586	11800	1055	10745	91.1
350				564	11800	1016	10784	91.4
400				533	11800	1197	10603	89.9

DAL06 300psig 155°C W+S W+S+G
 In (ppm) Out (ppm)

F (SLPM)	H2O (%)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%
2.0	10.0		4550		4553		-0.1	6	
2.0	10.0	8500	4550	295	578	96.5	87.3	261	93.3
1.9	10.5	9000	3200	2244	0	75.1	100.0	356	81.6
1.95	10.26	8750	3900	776	22	91.1	99.4	218	93.7
2.05	9.76	8270	5150	192	855	97.7	83.4	-512	92.2
F (SLPM)	H2O (%)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
2.0	10.0				0	4550	4553	-3	-0.1
2.0	10.0				463	13050	1336	11714	89.8
1.9	10.5				570	12200	2814	9386	76.9
1.95	10.26				533	12650	1331	11319	89.5
2.05	9.76				481	13420	1528	11892	88.6

DAL07 300psig 10% W 18.2% W W+G W+G+S
 In (ppm) Out (ppm)

T (°C)	F (SLPM)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%
155	2.0	8760		8199		6.4		561	6.4
155	2.0	8760	4400	300	698	96.6	84.1	1056	92.4
155	1.1	8760	4400	273	209	96.9	95.3	105	96.3
145	1.1	8760	4400	334	63	96.2	98.6	-248	97.0
135	1.1	8760	4400	269	99	96.9	97.8	-111	97.2
T (°C)	F (SLPM)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
155	2.0				559	8760	8758	2	0.0
155	2.0				465	13160	1463	11697	88.9
155	1.1				721	13160	1203	11957	90.9
145	1.1				588	13160	985	12175	92.5
135	1.1				508	13160	876	12284	93.3

DAL08		300psig	135°C	S+G		S+G+W			
		In (ppm)		Out (ppm)					
F (SLPM)	H2O (%)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%
0.9	0.0	8760	4700	104	682	98.8	85.5	620	94.2
1.1	18.2	8760	4700	150	461	98.3	90.2	132	95.5
2.0	10.0	8760	4700	265	705	97.0	85.0	505	92.8
2.10	9.5	8760	4700	295	624	96.6	86.7	313	93.2
2.10	9.5		4700	3	4733		-0.7	63	
F (SLPM)	H2O (%)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
0.9	0.0				452	13460	1238	12222	90.8
1.1	18.2				406	13460	1017	12443	92.4
2.0	10.0				214	13460	1184	12276	91.2
2.10	9.5				234	13460	1153	12307	91.4
2.10	9.5				5	4700	4741	-41	-0.9

DAL09		10% H2O	135°C	2 SLPM	W+S	W+S+G				
		In (ppm)			Out (ppm)					
P (psig)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%		
300		4040		4039		0.0	-2			
300	8700	4040	383	175	95.6	95.7	587	95.6		
350	8700	4040	551	7	93.7	99.8	83	95.6		
350	8700	4040	321	25	96.3	99.4	349	97.3		
P (psig)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)		
300				0	4040	4039	1	0.0		
300				367	12740	925	11815	92.7		
350				463	12740	1021	11719	92.0		
350				440	12740	786	11954	93.8		

DAL10		10% H2O	135°C	2 SLPM	W+S	W+S+G				
		In (ppm)			Out (ppm)					
P (psig)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%		
300		4200		4207		-0.2	14			
300	8700	4200	290	615	96.7	85.4	1240	93.0		
350	8700	4200	210	529	97.6	87.4	1148	94.3		
400	8700	4200	166	509	98.1	87.9	1152	94.8		
450	8700	4200	148	504	98.3	88.0	1160	94.9		
375	8700	4200	178	595	98.0	85.8	1312	94.0		
325	8700	4200	250	675	97.1	83.9	1400	92.8		
P (psig)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)		
300				0	4200	4207	-7	-0.2		
300				233	12900	1138	11762	91.2		
350				213	12900	952	11948	92.6		
400				211	12900	886	12014	93.1		
450				218	12900	870	12030	93.3		
375				202	12900	975	11925	92.4		
325				192	12900	1117	11783	91.3		

DAL11		300psig	135°C		W+G		W+G+S			
		In (ppm)			Out (ppm)					
F (SLPM)	H2O (%)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%	
2.0	10.0	9200		9030		1.8		170		
1.8	11.1	9200		8977		2.4		223		
1.5	13.3	9200		8944		2.8		256		
1.5	13.3	9200	3000	3945	0	57.1	100.0	-745	67.7	
1.2	16.7	7670	3750	2145	0	72.0	100.0	-1975	81.2	
1.0	20.0	6440	5400	399	2	93.8	100.0	-4755	96.6	
F (SLPM)	H2O (%)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)	
2.0	10.0				160	9200	9190	10	0.1	
1.8	11.1				170	9200	9147	53	0.6	
1.5	13.3				172	9200	9116	84	0.9	
1.5	13.3				184	12200	4129	8071	66.2	
1.2	16.7				249	11420	2394	9026	79.0	
1.0	20.0				388	11840	789	11051	93.3	

DAL12		300psig	135°C		W+S		W+S+G			
		In (ppm)			Out (ppm)					
F (SLPM)	H2O (%)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%	
1.35	14.8		3300		3272		0.8	-56		
1.35	14.8	8800	3300	1567	0	82.2	100.0	633	87.0	
0.85	23.5	7800	5850	33	582	99.6	90.1	-2769	95.5	
1.05	19.05	8330	4450	243	305	97.1	93.1	-203	95.7	
F (SLPM)	H2O (%)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)	
1.35	14.8				0	3300	3272	28	0.8	
1.35	14.8				265	12100	1832	10268	84.9	
0.85	23.5				568	13650	1183	12467	91.3	
1.05	19.05				407	12780	955	11825	92.5	

DAL13		18.2% W	135°C		1 SLPM		W+S		W+S+G		
		In (ppm)			Out (ppm)						
	P (psig)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%		
	300		4400		4412		-0.3	24			
	300	8400	4400	202	251	97.6	94.3	-100	96.5		
	350	8400	4400	256	130	97.0	97.0	-396	97.0		
	400	8400	4400	284	36	96.6	99.2	-612	97.5		
	400	8400		4947		41.1		3453	41.1		
	P (psig)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)		
	300				0	4400	4412	-12	-0.3		
	300				402	12800	855	11945	93.3		
	350				373	12800	759	12041	94.1		
	400				367	12800	687	12113	94.6		
	400				172	8400	5119	3281	39.1		

DAL14		300psig	135°C	W+S		W+S+G			
		In (ppm)		Out (ppm)					
F (SLPM)	H2O (%)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%
1.10	18.2	7500	5100	268	116	96.4	97.7	-2736	97.0
1.10	18.2		5100		5120		-0.4	40	
1.10	18.2	7500	5100	232	200	96.9	96.1	-2532	96.6
F (SLPM)	H2O (%)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
1.10	18.2				509	12600	893	11707	92.9
1.10	18.2				13	5100	5133	-33	-0.6
1.10	18.2				469	12600	901	11699	92.8

DAL15		300psig	135°C	S+G		S+G+W			
		In (ppm)		Out (ppm)					
F (SLPM)	H2O (%)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%
0.90	0.0	7500	5100	238	199	96.8	96.1	-2540	96.5
1.00	10.0	8800	5100	296	150	96.6	97.1	-1396	96.8
1.10	18.2	7500	5100	262	182	96.5	96.4	-2598	96.5
1.20	25.0	7500	5100	327	123	95.6	97.6	-2781	96.4
2.10	14.3	7500	5100	244	697	96.7	86.3	-1550	92.5
F (SLPM)	H2O (%)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
0.90	0.0				687	12600	1124	11476	91.1
1.00	10.0				696	13900	1142	12758	91.8
1.10	18.2				664	12600	1108	11492	91.2
1.20	25.0				548	12600	998	11602	92.1
2.10	14.3				286	12600	1227	11373	90.3

DAL16		300psig	18.2% W	W+S		W+S+G			
		In (ppm)		Out (ppm)					
T (°C)	F (SLPM)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%
135	1.1	7500	5100	220	273	97.1	94.6	-2374	96.1
125	1.1	7500	5100	246	362	96.7	92.9	-2222	95.2
125°C									
F (SLPM)	W (%)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%
1.1	18.2	7500	5100	246	362	96.7	92.9	-2222	95.2
1.2	16.7	8400	4550	304	295	96.4	93.5	-414	95.4
1.3	15.4	9300	4150	328	226	96.5	94.6	1124	95.9
1.3	15.4	9300		6369		31.5		2931	
T (°C)	F (SLPM)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
135	1.1				681	12600	1174	11426	90.7
125	1.1				448	12600	1056	11544	91.6
125°C									
F (SLPM)	W (%)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
1.1	18.2				448	12600	1056	11544	91.6
1.2	16.7				419	12950	1018	11932	92.1
1.3	15.4				386	13450	940	12510	93.0
1.3	15.4				261	9300	6630	2670	28.7

DAL17 300psig 125°C
W+S W+S+G
In (ppm) Out (ppm)

F (SLPM)	H2O (%)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%
1.0	10.0	7500	5100	106	634	98.6	87.6	-1538	94.1
1.1	9.1	8400	4550	223	446	97.3	90.2	-31	94.8
1.2	8.3	9300	4150	582	78	93.7	98.1	574	95.1
1.1 SLPM 8.3% W									
	P (psig)	H2S (ppm)	SO2 (ppm)	H2S (ppm)	SO2 (ppm)	X(H2S)%	X(SO2)%	H2S-2SO2	X(tot)%
	300	9300	4150	582	78	93.7	98.1	574	95.1
	350	8400	4550	342	78	95.9	98.3	-886	96.8
	400	8400	4550	320	27	96.2	99.4	-966	97.3
	300	8400	4550	379	168	95.5	96.3	-743	95.8
F (SLPM)	H2O (%)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
1.0	10.0				619	12600	1359	11241	89.2
1.1	9.1				605	12950	1274	11676	90.2
1.2	8.3				556	13450	1216	12234	91.0
1.1 SLPM 8.3% W									
	P (psig)				COS (ppm)	SUM In	SUM Out	Delta S	Effic. (%)
	300				556	13450	1216	12234	91.0
	350				607	12950	1027	11923	92.1
	400				662	12950	1009	11941	92.2
	300				604	12950	1151	11799	91.1