Francis Martinez

From: Bobby Powel [bpowell@amspecllc.com]
Sent: Thursday, December 16, 2010 8:50 AM
To: francis.martinez@altolenterprises.com
Subject: FW: Altol Lab D-4294 findings

From: Bobby Powel
Sent: Wednesday, December 15, 2010 6:47 PM
To: puertorico Distribution List
Cc: Malcolm Vella
Subject: Altol Lab D-4294 findings

I have included the spreadsheet, look at the last tab an in red to see the latest results
I have also included a spreadsheet to quickly calculate whether or not the sulfur is in spec.

Went to the Altol lab, and used method #3 on the Horbia Sulfur analyzer D-4294 and recalibrated with,
0.1,0.25,0.5,0.7,1.0,2.0,3.0 curve. I also had a prepared std from Isgas and it was 0.5. Started a qc chart with this material. It averaged
About 0.50 to 0.503 so it was great. Also Linden sent me an astm rr sample that was 1.08 and started a qc chart with it also and it
Ran about 1.09 to 1.11 so it was good also. Will train Altol how to use the chart. Will plot about 10 to 14 point before I leave.

I reran the samples in question and they had reported about a 0.52 and 0.51. After the recalibration the rechecks were 0.49 3 times and 0.50 on the 4th
Time. Why, well all of these samples are within astm range. But fresh calibration standards, also the old standards were in oil and the new ones were in residual fuel
Oil. I think the matrix should mimic the sample as close as possible. One other point is the longer the samples standards or qcs set out, the sulfur will slowly boil off due to the light
nature in sulfur compounds.

I have started 2 qc charts 1 with the astm rr material and the other qc chart in heavy mineral oil. These need to be ran daily and plotted on the qc chart. At the end of the week
Sent to Matt Riley and he will watch over them.

As far as an sop
Use method #3
Run astm rr and qc samples
Plot the results and make sure they are in range
Then fill sample cup with enough sample to fill in-between the lines on cup
Place mylar film onto cup and put ring on cup, make sure there is no creases,
Nor do you want finger prints
Place into turret
Close lid
Press measure

When finished the number on the printout is what you report in WT%
Properly dispose of the cup and sample

If there is any question call Bobby Powell 713-875-2618

Entregado por El Sero - Alvin Tollinch, 12/17/2010 para que lo evaluará

AmSpec
Inspection of petroleum & chemicals

PARAMETER	ASTM METHOD	AmSpec - NYH	Altol	AmSpec - Houston	altol
Gravity, API Degree at 60° F	D-287	9.8	9.7	9.5	new
Viscosity, SFS at 122° F	D-445 D-88	47.70	47	44.8	
Water and Sediment, % vol.	D-1796 D-473	0.30	0.2	0.15	
Flash Point, Degree F, PMCT	D-93	159	183	170	
Sulfur, % weight [1]	D-4294	0.57	0.59	0.585	0.57
Ash, % weight	D-482	0.132	0.18	0.124	
Asphaltenes, % weight	D-3279	1.48	1.4	1.55	
Pour Point, Degree F	D-97	54	41	59	
Sodium plus Potassium, PPM[2]	D-1318	<5*	5.11	5.7*	
Vanadium, PPM	D-1548 D-5708 D-5863-A	8*	8.3	5.9*	
Calcium, PPM	D-5863-B	9*	5.01	9.8*	
Heating Value, BTU/gal. (Gross) at 60° F	D-240	18,598	18,373	18,168	

* Method used was ICP

PARAMETER	ASTM METHOD	AmSpec - NYH	Altol	AmSpec - Houston	
Gravity, API Degree at 60° F	D-287	10.0	10.1	9.7	
Viscosity, SFS at 122° F	D-445 D-88	122	123	120.2	
Water and Sediment, % vol.	D-1796 D-473	0.20	0.2	0.30	
Flash Point, Degree F, PMCT	D-93	197	220	188	
Sulfur, % weight [1]	D-4294	0.740	0.77	0.777	0.75
Ash, % weight	D-482	0.085	0.09	0.071	
Asphaltenes, % weight	D-3279	2.63	3.0	2.57	
Pour Point, Degree F	D-97	48	+56	48	
Sodium plus Potassium, PPM[2]	D-1318	7*	3.29	11.0*	
Vanadium, PPM	D-1548 D-5708 D-5863-A	16*	20.3	14*	
Calcium, PPM	D-5863-B	8*	6.11	9.5*	
Heating Value, BTU/gal. (Gross) at 60° F	D-240	18,600	18,396	18,368	

* Method used was ICP

PARAMETER	ASTM METHOD	AmSpec - NYH	Altol	AmSpec - Houston	
Gravity, API Degree at 60° F	D-287	12.1	12.1	11.8	
Viscosity, SFS at 122° F	D-445 D-88	133.2	135	129.4	
Water and Sediment, % vol.	D-1796 D-473	0.1	0.1	0.15	
Flash Point, Degree F, PMCT	D-93	197	196	195	
Sulfur, % weight [1]	D-4294	1.36	1.38	1.400	1.37
Ash, % weight	D-482	0.038	0.01	0.033	
Asphaltenes, % weight	D-3279	5.54	5.9	5.19	
Pour Point, Degree F	D-97	37	+44	43	
Sodium plus Potassium, PPM[2]	D-1318	<5*	9.91	18.0*	
Vanadium, PPM	D-1548 D-5708 D-5863-A	87*	116.0	80*	
Calcium, PPM	D-5863-B	24*	13.00	27.0*	
Heating Value, BTU/gal (Gross) at 60° F	D-240	18,698	18,734	18,354	

* Method used was ICP

Sulfur Level Wt. %	Tolerance +/-
0.25	0.0121
0.50	0.0194
0.75	0.0266
1.00	0.0338
1.50	0.0483
2.00	0.0628
2.50	0.0772
3.00	0.0917
3.50	0.1062
4.00	0.1206
4.50	0.1351
5.00	0.1496

To calculate the tolerance for a given range use the following:

$$\text{Repeatibility} = (X + 0.1691) \times 0.02894$$

Where X = Sulfur %

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Inspectors of petroleum & chemicals

PARAMETER	ASTM METHOD	AmSpec - NYH	Altol	AmSpec - Houston	MEAN
Gravity, API Degree at 60° F	D-287	12.1	12.1	11.8	12.0
Viscosity, SFS at 122° F	D-445 D-88	133.2	135	129.4	132.5
Water and Sediment, % vol.	D-1796 D-473	0.1	0.1	0.15	0.1
Flash Point, Degree F, PMCT	D-93	197	196	195	196.0
Sulfur, % weight [1]	D-4294	1.36	1.38	1.400	1.380
Ash, % weight	D-482	0.038	0.01	0.033	0.027
Asphaltenes, % weight	D-3279	5.54	5.9	5.19	5.543
Pour Point, Degree F	D-97	37	44	43	41
Sodium plus Potassium, PPM[1]	D-1318	5	9.91	18.0	10.970
Vanadium, PPM	D-1548 D-5708 D-5863-A	87	116.0	80	83.5
Calcium, PPM	D-5863-B	24	13.00	27	25.5
Heating Value, BTU/gal. (Gross) at 60° F	D-240	18,638	18,734	18,364	18579

* LN & HO used ICP Method

In statistical calculation the data out side ASTM reproducibility of the mean of the other two is rejected.

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PARAMETER	ASTM METHOD	AmSpec - NYH	Altol	AmSpec - Houston	MEAN
Gravity, API Degree at 60° F	D-287	10.0	10.1	9.7	9.9
Viscosity, SFS at 122° F	D-445 D-88	122	123	120.2	121.7
Water and Sediment, % vol.	D-1796 D-473	0.20	0.2	0.30	0.2
Flash Point, Degree F, PMCT	D-93	197	220	188	193
Sulfur, % weight [1]	D-4294	0.740	0.77	0.777	0.762
Ash, % weight	D-482	0.085	0.09	0.071	0.082
Asphaltenes, % weight	D-3279	2.63	3.0	2.57	2.60
Pour Point, Degree F	D-97	48	56	48	51.0
Sodium plus Potassium, PPM[2]	D-1318	7	3.29	11.0	9.0
Vanadium, PPM	D-1548 D-5708 D-5863-A	16	20.3	14	16.8
Calcium, PPM	IP-470	8	6.11	9.5	7.9
Heating Value, BTU/gal. (Gross) at 60° F	D-240	18,600	18,396	18,368	18455

* LN & HO used ICP Method

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AmSpec™

Inspectors of petroleum & chemicals

PARAMETER	ASTM METHOD	AmSpec - NYH	Altol	AmSpec - Houston	MEAN
Gravity, API Degree at 60° F	D-287	9.8	9.7	9.5	9.7
Viscosity, SFS at 122° F	D-445 D-88	47.70	47	44.8	46.5
Water and Sediment, % vol.	D-1796 D-473	0.30	0.2	0.15	0.2
Flash Point, Degree F, PMCT	D-93	159	183	170	170.7
Sulfur, % weight [1]	D-4294	0.57	0.59	0.585	0.581
Ash, % weight	D-482	0.132	0.18	0.124	0.128
Asphaltenes, % weight	D-3279	1.48	1.4	1.55	1.48
Pour Point, Degree F	D-97	54	41	59	51.0
Sodium plus Potassium, PPM[1]*	D-1318	5.00	5.11	5.7	5.3
Vanadium, PPM*	D-1548 D-5708 D-5863-A	8	8.3	5.9	7.4
Calcium, PPM*	IP-470	9	5.01	9.8	7.9
Heating Value, BTU/gal. (Gross) at 60° F	D-240	18,598	18,373	18,168	18380

* LN & HO used ICP Method

In statistical calculation the data out side ASTM reproducibility of the mean of the other two is rejected.