Kristopher Rickards

From: Ernst, Michael C <Michael.Ernst@hdrinc.com>
Sent: Tuesday, July 17, 2012 8:22 AM
To: Kristopher Rickards
Subject: RE: Bakersfield Crude Terminal, LLC

Categories: Red Category

Kris,

The most readily available RVP data is from oil assays. We would be able to assign a RVP value to each shipment based on assay data for its place of origin. Keeping daily records of the throughput and RVP should allow us to verify compliance over any twelve month period. Let me know if that works for you.

I will have to get back to you on the lowering the throughput to avoid public notice. The requirement for public notice is based on health, correct. I assume the health risk modeling came back with acute risk levels higher than thresholds for one or more pollutants.

MICHAEL ERNST
PE (IN PE1110098)
CPSWQ, QSD/QSP

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Project Manager/Environmental Engineer

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From: Kristopher Rickards [mailto:kristopher.rickards@valleyair.org]
Sent: Monday, July 16, 2012 3:21 PM
To: Ernst, Michael C
Subject: RE: Bakersfield Crude Terminal, LLC

I discussed this annual average with the lead on this project here and the only issue we would have is how the actual averaging of vapor pressures would be calculated for the annual emissions. We could certainly limit daily shipments to 11.0 psia but would need a way to assure annual emissions remained below annual limits with oil RVP >8.3 psia being stored.

On another note, I left off daily limits (in terms of throughput) on each tank. To avoid public noticing of these tanks it looks like each tank's individual limit would need to be about 135,000 bbl/day. Is that a limit the terminal can work within? If not, we can certainly put the full 168,000 bbl/day limit on each tank, we would just need to notice this project for 30 days before issuing permits.

-Kris Rickards

From: Ernst, Michael C [mailto:Michael.Ernst@hdrinc.com]
Sent: Thursday, July 12, 2012 2:06 PM
To: Kristopher Rickards
Subject: RE: Bakersfield Crude Terminal, LLC

Kris,

I just has a conference call with BCT. They would like the ability to offload crude oil with RVP up to 11.0 with the annual average not to exceed 8.3. Most of the offloads are expected to have RVPs below 8, and almost never above 9, but it does occasionally happen.

What would the record keeping conditions look like and how to people generally show compliance?

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From: Kristopher Rickards [mailto:kristopher.rickards@valleyair.org]
Sent: Wednesday, July 11, 2012 1:08 PM
To: Ernst, Michael C
Subject: RE: Bakersfield Crude Terminal, LLC

Michael,

Emissions from the tank are required to have a daily limit per our New Source Review Rule (2201), which is dependent on the RVP of oil stored. We could recalculate with a higher daily RVP limit and keep the same annual emissions related to an average 8.3 psia RVP though. These changes would require reworking the daily and hourly emissions and remodeling dispersion for the tanks. We'd need recordkeeping on both an annual and daily frequency as well.

I don't see any issues with doing this as modeling passed just fine and emissions, outside of annual that wouldn't be changing, aren't close to any thresholds we'd need to be concerned about. The only thing that would limit these in any way is that internal floating roof tanks can only be used to store fluids with a TVP up to 11.0 psia per Rule 4623. I doubt you'd be proposing anything close to this threshold though.

-Kris Rickards

From: Ernst, Michael C [mailto:Michael.Ernst@hdrinc.com]
Sent: Wednesday, July 11, 2012 12:37 PM
To: Kristopher Rickards
Subject: RE: Bakersfield Crude Terminal, LLC

Kris,

I'm sending these to the client for their review and comments. One question I have right now is about Condition #5 regarding the RVP. Would it be possible to change they condition from a maximum RVP of 8.3 to a monthly or yearly average RVP of 8.3?

Our understanding is that pipelines downstream have RVP limits in the 8.2-8.3 range, however BCT would like to retain the ability to offload higher RVP crude oils and blend them in the tank with a lower RVP up to the 8.3 limit.

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From: Kristopher Rickards [mailto:kristopher.rickards@valleyair.org]
Sent: Wednesday, July 11, 2012 11:34 AM
To: Ernst, Michael C
Subject: RE: Bakersfield Crude Terminal, LLC

They're attached.

-Kris Rickards

From: Ernst, Michael C [mailto:Michael.Ernst@hdrinc.com]
Sent: Wednesday, July 11, 2012 11:24 AM
To: Kristopher Rickards
Subject: RE: Bakersfield Crude Terminal, LLC

Kris,

Please send the unofficial draft ATCs so I can take a look at them.

Thanks,

MICHAEL ERNST
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From: Kristopher Rickards [mailto:kristopher.rickards@valleyair.org]
Sent: Wednesday, July 11, 2012 8:45 AM
To: Ernst, Michael C
Subject: RE: Bakersfield Crude Terminal, LLC

Project is wrapped up and being reviewed by the lead engineer. I've let him know that it is an expedited project as well. As soon as he's finished, it gets vetted through our compliance department and they have up to 3 days to comment. Pending no comments, I will then send draft Authorities to Construct (ATCs) to you for review and comment.

If you'd like, I can send some unofficial draft ATCs to you now and then if the lead or compliance has any comments I can bring these to your attention if/when they come about?

Kris Rickards
Senior Air Quality Engineer

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Make one change for clean air!

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From: Ernst, Michael C [mailto:Michael.Ernst@hdrinc.com]
Sent: Wednesday, July 11, 2012 8:07 AM
To: Kristopher Rickards
Subject: RE: Bakersfield Crude Terminal, LLC

Hi Kris,

I'm looking for a status update on the BTC permit (problems, estimated completion date)? I have a meeting with BTC later this week.

Thanks,

MICHAEL ERNST
PE (IN PE1110098)
CPSWQ

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From: Kristopher Rickards [mailto:kristopher.rickards@valleyair.org]
Sent: Thursday, June 28, 2012 9:11 AM
To: Ernst, Michael C
Subject: RE: Bakersfield Crude Terminal, LLC

No problem at all. I'll make a note in the file and get those out to you as soon as I can.

-Kris Rickards

From: Ernst, Michael C [mailto:Michael.Ernst@hdrinc.com]
Sent: Thursday, June 28, 2012 8:58 AM
To: Kristopher Rickards
Subject: RE: Bakersfield Crude Terminal, LLC

The question about having the components buried or not came directly from BTC. Honestly, I don't think they know what they are going to do at this point so having all the fittings exposed and contributing to emissions is the safest thing to do.

Please move forward with the revised numbers.

Also it I believe we did not request a 3 day or 7 day time period to review the draft permit before it is officially issued. Since we are cutting it so close, now I'm feeling it would be wise for me and BCT review all the conditions to make sure we can comply prior to in being officially issued. Would it be possible for you to email me a draft once it is written so we could take a quick look?

Thanks,

MICHAEL ERNST
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CPSWQ

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From: Kristopher Rickards [mailto:kristopher.rickards@valleyair.org]
Sent: Wednesday, June 27, 2012 4:08 PM
To: Ernst, Michael C
Subject: RE: Bakersfield Crude Terminal, LLC

Michael,

You're right, that tank condition description was the problem. Also, our Stationary Source Potential to Emit is based on annual emissions so we typically just use this option as opposed to the monthly summation calculation method, which results in 9,460 lb-VOC/year/tank.

With this new annual value we would need to limit the disconnects to 3.2 ml/disconnect to keep the potential facility emissions below 20,000 lb/year (results in 19,991 lb-VOC/year). This would work but would leave very little margin for compliance.

As for underground components, they are not considered in determining emissions and are not inspected. The District has no requirement or preference on whether these connections are above or below ground, though facilities typically install piping above ground from what I've seen. Does that change your component inventory at all? Otherwise, and if the 3.2 ml/disconnect sounds like a reasonable limit, I'm ready to get these revised calculations to the modeler.

-Kris Rickards

From: Ernst, Michael C [mailto:Michael.Ernst@hdrinc.com]
Sent: Wednesday, June 27, 2012 11:08 AM
To: Kristopher Rickards
Subject: RE: Bakersfield Crude Terminal, LLC

Also, does the District have any requirements/preference on whether piping connections between the offloading racks and tanks are aboveground or underground? Does that affect emissions either way?

Thanks,

MICHAEL ERNST
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From: Ernst, Michael C
Sent: Wednesday, June 27, 2012 10:57 AM

To: 'Kristopher Rickards'
Subject: RE: Bakersfield Crude Terminal, LLC

Kris;

Looking at your TANKS report, it looks like you select "Poor" for the shell condition, while I selected "Good". I believe that is the reason for the discrepancy.

Also our project specifications call for disconnects with a 3.02 ml per disconnect average leak rate. I think we would be fine with a permit condition specifying that.

Please rerun run your numbers and let me know if those two things get us under the 20,000 lb threshold. We are trying to avoid Title V at this time because BCT feels the need to get the terminal built and establish themselves in the market ASAP. They asked me to give them the maximum throughput that would keep them under the threshold. They are fine with going Title V in the future if they have the need to expand things, but would rather not right now.

If will still over, I'll discuss with them the options for lowering the emissions further.

Thanks,

MICHAEL ERNST
PE (IN PE1110098)
CPSWQ

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From: Kristopher Rickards [mailto:kristopher.rickards@valleyair.org]
Sent: Tuesday, June 26, 2012 1:54 PM
To: Ernst, Michael C
Subject: Bakersfield Crude Terminal, LLC

Michael,

I have the following summary of emissions for this project (components listed under "Tank to booster disch." And "Booster disch to pipeline discharge" in a previous email are listed with the tank permits, S-8165-1-0 and '-2-0, with the remainder listed under the unloading rack, S-8165-3-0):

S-8165-1-0 and '-2-0:

Internal Floating Roof Tank Emissions per Tank		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
VOC	26.1	9,533

Fugitive Emissions from Components per Tank				
Equipment Type	Number of Components per tank	Light Liquid Emission Factor (lb/hr/source)	Fugitive VOC Emissions (lb/day)	Fugitive VOC Em (lb/yr)
Valves	50	9.5E-05	0.1	42
Pump Seals	2	1.2E-03	0.1	21
Others	0	2.9E-04	0.0	0
Connectors	100	1.8E-05	0.0	16
		Total =	0.2	78

Post Project Potential to Emit (PE2)		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
Tank Emissions	26.1	9,533
Fugitive Emissions	0.2	78
Total VOC	**26.3**	**9,611**

S-8165-3-0:

Disconnect losses are calculated as follows:

Crude oil density = 7.1 lb/gallon (AP-42, Table 7.1-2)

$$\left(\frac{208\ disconnects}{day}\right)\frac{8\ mL}{disconnect}\left(\frac{0.000264\ gallons}{mL}\right)\frac{7.1\ lb}{gallon} = 3.1\frac{lb \cdot VOC}{day}$$

$$\left(\frac{75{,}920\ disconnects}{year}\right)\frac{8\ mL}{disconnect}\left(\frac{0.000264\ gallons}{mL}\right)\frac{7.1\ lb}{gallon} = 1{,}138\frac{lb \cdot VOC}{year}$$

Fugitive Emissions from Components per Tank				
Equipment Type	Number of Components per tank	Light Liquid Emission Factor (lb/hr/source)	Fugitive VOC Emissions (lb/day)	Fugitive VOC Em (lb/yr)
Valves	250	9.5E-05	0.6	208
Pump Seals	15	1.2E-03	0.4	158
Others	0	2.9E-04	0.0	0
Connectors	600	1.8E-05	0.3	95
		Total =	1.3	460

Post Project Potential to Emit (PE2)		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
Disconnect Losses	3.1	1,138
Fugitive Emissions	1.3	460
Total VOC	**4.4**	**1,598**

This results in annual emissions from this facility of 20,820 lb-VOC.

Also, I've attached a monthly summary of the output I am getting for these tanks. Could you send the data file for this so I can see why there is a discrepancy in these figures? Otherwise, I'll have to go with what I have and that would add an additional 118 lb-VOC per tank (236 lbs-VOC total) that we'd have to mitigate, which is not reflected in the calculations summary above.

If we are going to keep this under the offset threshold (20,000 lb-VOC/year) we could perform the following:

- Reduce the disconnect losses to <8 ml/disconnect (in combination with other changes)
- Reduce the throughput of each tank to about 11 million bbl/year
- Reduce the number of fugitive components (not a lot of emissions here though)
- Reduce the number of annual disconnects (would require a large reduction if not combined with other changes)
- A combination of the above

Alternatively, if BCT is able to provide offsets for the amount of VOC emissions over 20,000 lbs/year then we can proceed at the proposed levels.

Kris Rickards
Senior Air Quality Engineer

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