

# National STEPS Network

## Respirable Focus Group Minutes and Notes

### December 1, 2014

**Meeting Location:**

Hilton Americas, Ballroom 335A&B, Downtown Houston, TX

**Moderator:**

Rick Ingram, S.G.E.  
BP L-48 Onshore  
Chairperson, National STEPS Network

Start time: 1245p

Lisa London giving a brief on the OSHA Oil & Gas Conference for the next two days. If anyone is interested in being on the planning committee for the event in two years, please let her know.

**Speakers:**

- Travis Anderson, NOV Appco- Engineering Controls
- Updates and presentations on several manufacturers
- May Chau, BP- Industrial Hygiene, Bureau VERITAS Data Collection
- Elizabeth Lawhorn- Communications
- Eric Esswein, NIOSH

**Attendees:**

Rick Ingram has attendee list

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This group will transition into emerging issues within the O&G industry and focus on those.

OSHA just issued a Hazard Alert for items other than RCS for hydraulic fracturing. Hazard Alert is online right now.

There will be team updates from engineering controls, industrial hygiene and communications.

**Industrial Hygiene**

May Chau- BP  
Jenny Crittall- Bureau VERITAS

Kim Callson- BV

Updated on silica data project; survey closed on August/October 1<sup>st</sup> (?); over 600 sample records submitted...significant amount of data. Sample records from: Bakken Barnett, Eagle Ford, Monterrey, Fayetteville, Haynesville and in Canada Oil Sands. Samples from full shift and partial shift samples, along with fixed area samples.

All indicators of names, companies, etc., were removed by one person from BV, so there were unbiased exposure groups. Took an additional step for exposure groups to remain completely anonymous. Once that happened, data team did a quality control step (very important)...took quite a bit of time and data and potential errors that may have occurred the way data was submitted.

Jenny Crittall- Found some invalid records where sampling flow rate was too high or low, pre-imposed info, missing data, polymorphs inconsistent (listen to recording for all info), different analytical method used, blank corrected (assumed to be applied correctly). Some records had questions, but modified; inconsistent sample time and sample types, some concentrations below limited of quantification

Several new people in the room and explaining further explanation on

API organizer of the project and selected BV to collect the data and maintain anonymity of that data; launched website for questions to answer and conducted survey for RCS. Period extended several times, in order to collect enough data.

Next steps: Started to look at different statistical views and what that information tells BV; working with API and API member companies and will be working on a summary to share. Thank you to all companies that submitted

Question: Time frame? (Amy with API answered) Summer of next year is the time frame to release the information.

Data set is 600, was that net or less than that? Over 600 submitted, 520 were actually valid samples.

Was there any info submitted that engineering controls were in place? Yes. Data gathered is still on the website and shows the different areas.

How many companies participated? Unknown, since it was blinded.

Website: [www.silicasurvey.bureauvertiashse.com](http://www.silicasurvey.bureauvertiashse.com)

Was one of the data points the type of proppant being used? Yes and mesh size as well. Tried to collect enough of different variables to draw conclusions from that.

Dr. David Michaels introduction by Rick; longest standing head of OSHA

Thanking the group for coming out early and working on the RCS problem. Has no doubt that this group will solve this problem; because in regulatory stages, cannot listen to comments or they would have to be put into the record (Kelly and Jonathan here from DC)

In attendance: Jonathan Berr (health scientist in OSHA w/toxicology background) and Kelly Schnapp (director for office of science technology and assessment; background is offshore environmental O&G industry).

### **Communications**

Elizabeth Lawhorn-Crider

Accomplishments over last year; should be proud but not satisfied...only at the beginning.

One key issues discussed is the silica group is never done, many other issues in fracturing that need to be addressed in upstream E&P. Resources and education is something that came out of this group that is necessary...will continue to work on silica issues and will rename the Emerging Issues Focus Group.

## Accomplishments:

- Spanish version of RCS video
- short-term solutions in Spanish as well
- distributed over 2,000 hard copies of the video
- available on YouTube as well
- involvement of volunteers from the EIFG
- rewrite of OSHA document (making sure was correct)
- matrix to be included in the document Hydraulic Fracturing Frequently Used Chemicals (matrix organized by task/hazard/adding prevention strategies).
- Need follow up for hazard communication
- Needed to educate and volunteers to go out
- Needed to increase the use of the free tools that are available
- Need to develop a checklist
- Toolbox is in the works, but not completed yet...need volunteers for the employees, contractors and supervisors
- Develop target population campaign with a logo with basic info
- API coordinated effort to expand
- OSHA, NIOSH committed to provide support to the group and the industry
- Had opportunity for the well-defined NAICS codes, where do we need to apply industry resources...needed to provided feedback on statistical data points

Management commitment or lack of/lack of training and education...felt should be using NIOSH's bmp's, educating employees on PPE, language barriers were an issue, training is important, emphasis the need to use self-verification. In the end, reach out to educate management and workers.

Summary: remarkable in the turn of events, that only 11 years ago (2003) that the US was running out of energy. Workforce has grown, have the opportunity to educate on the facts and continue to work forward to protect workers out in the field.

Going around the room and making introductions of ourselves. Rick and Marianne have the attendee list (refer to recording).

Reason for this meeting is to protect the workers...not here for us, here to share ideas and learn, but here for the people in the field that are exposed to silica. And now we will expand it to other emerging issues.

Break: 127p

Reconvene: 147p

Spanish silica video is [www.oshastanddown.org](http://www.oshastanddown.org)

## **Engineering Controls**

Travis Anderson- NOV Appco

Over the past couple years has been pretty busy...been thanks to organizations and companies that see an opportunity to provide a service. Round table and presentation this week at the OSHA O&G Conference to talk about their products and discussion in an open environment.

A couple presentations that are detailed in nature, Helen Cumminskey and Matthew Navea, coating technologies that coat the proppant. After that, use the group as an audience to practice for presentations tomorrow.

Helen Cumminsky, American Refining Group  
Kendex DUST DEFENSE

Was able to go on a frac site for the first time a couple weeks ago and didn't realize how much of an issue there was with the dust.

Presentation will be available for the group (see Rick Ingram); coated 23 railcars of material in Greene County, PA; drivers felt treated sand offloaded quicker than untreated sand. Treatment will be done at the sand processing facility. Sand particles don't have the same breakdown with transport as before, less dust during transport. Long-term is to reduce or eliminate need for a vacuum system.

The moisture repellency actually speeds up the process of unloading the railcars (by 20 minutes).

Refer to 56 minutes for background on this slide.

Numbers from the test: went from 1,152 down to 15; 98% reduction...on 40/70 mesh; 30/50 is a 99% reduction (underground mine); 100 mesh 14,583 down to 46, 99% reduction

What is the cost of the product? Would like to meet separately and defer any commercial discussion.

Successfully field-tested at a frac site, did you pump downhole? Yes, yes, we did. What

Was there worker exposure monitoring for that job? No. Took 74 sand samples that will be tested in the lab to determine if the coating is still effective at those points.

Recommended storage above 70 degrees F, how will that be stored in cold? Only the liquid needs to be stored at that temperature.

How is the treatment applied to the sand? A spray system. Each mine has a different type of system and production facility.

Paul Binder, 517-420-6814, [pbinder@amref.com](mailto:pbinder@amref.com), Mike Greene 814-368-1398, [mjgreene@amref.com](mailto:mjgreene@amref.com)

Matthew Navea, Preferred Sands  
Preferred DustPRO

Background is EHS and has been with Preferred for three years; HSE Manager for Preferred. Had an existing collaboration with Dow to add a treatment to sand to reduce the particles of RCS. Eventually there will be a collaboration between different types of engineering controls to work together.

DustPRO can be put on any sand.

Presentation will be available for the group (see Rick Ingram)

84 samples from six different wellsite (DJ Basin in CO)  
92% of samples take below the current PEL  
100% of the last 25 samples were below the PEL and the proposed PEL

How does it work? Treatment makes sand particle more robust, particularly before going downhole. Not changing chemistry of the proppant...product is sprayed on

Does the treatment have any affect on the characteristics? Does change the diameter a little bit (refer to the recording for the answer 16/16- 17m 36sec)

Is there any storage temperatures you have to maintain? -22 C they are seeing no issues

Any affect no speed it can be pumped downhole? In general, no affect on the pump rate. One job was pumping so much sand, they decreased concentration of the treatment to see if it would help...ended up being more of a blender issue than the sand.

Did you pump six sites or wells? Six full wellsite...no change in production plus/minus. It did meet expected production levels.

For application, do you sell the treated sand or the product and application? Both. Goes either through railcar (terminal) or static mixer (wellsite)

Over 100,000 tons have been pumped to-date...all jobs thus far have been in the DJ Basin.

Break: 236p

Reconvene: 255p

Round Table Presentation practice for tomorrow (presentation available from Rick)

Helen Cumminsky- American Refining Group

Matt Navea- Preferred Sands

James Duerr- SandCan

Santo Petitto- KSW Environmental

Travis Anderson- NOV Appco

Timothy Hicks- Hicks Health & Safety

Bob Glenn- HalenHardy

Any recommendations to get info to the workers and how is that happening? Jobsite is the best way to give information...info available at [oshastanddown.org](http://oshastanddown.org), National STEPS Network, individual STEPS websites.

Joan and Elizabeth was going to do a phone tree on where people are using it, is it being used.

Pre-job JSA's are a good place to provide the education; needs to become more involved with operator and service company training

How do we get to the end goal and how far away are we away from that? Eric from NIOSH- Basket of goods approach for the eight points of generation that have been identified so far.

Has anybody done any sampling on caliche dust and diesel particulate matter? Deferring question until later.

Break at 349p

Reconvene at 403p

Eric Esswein- NIOSH

Update on Mini Baghouse Retrofit Assembly for Control of Silica Dust Emissions from Sand Movers  
Presentation will be available (Rick will have)

NIOSH thanks industry partners for the research that NIOSH does, Southwestern Energy especially

Still to-date 8 primary points of dust generation

12 different samples sites: 6 on top and 6 on bottom

Envision the bag house as a short-term resolution until a long-term one(s) can be determined

Some of the RCS collected was rounded and angular; some larger particles showed sharp points that evidenced no wear and were freshly broken. Larger particles have several smaller particles adhered to them (nano-sized silica). Not sure if anything knows the toxicology of the nano-sized silica.

Results: Tomorrow at 1130a, Dr. Bradley King

Production Tank Headspace VOC Assessment and Worker Exposure Modeling Study  
John, NIOSH (Rick will have presentation)

Emerging issues, workers are breaching the tanks to gauge, to offload, etc. How do we measure these for benzene?

BTEX Focus of Most Worker Sampling

Hazard: flammability, acute effect, acute toxicity, chronic toxicity

Hard to quantify numbers because it is a quick puff and then it is gone; goal is to keep exposures to the bare minimum

Potential for short-term worker exposures that could lead to harmful or fatal outcomes

Why is this an issue? NIOSH Science Blog May 2014; Petroleum Safety Authority (Norway) 2006 and UK Health & Safety Executive 2004

Problem: Inhalation can cause acute adverse health effects: asphyxiation, narcosis, cardiac arrest, aspiration...first two are more significant offshore

Many VOC's in hydrocarbon streams have OEL's much lower than the LEL. A lot of toxic molecules that have numerous effects. EPA is rolling out regulations.

Flaw: the EPA took no occupational safety and health into consideration

Problem: workers are required to breach controls to gauge tanks

Proposed study: work with industry, manufacturers to determine behavior, total concentration and chemical characterization of vapor plume and headspace of VOC's. Conduct measurements under different ambient conditions, basins and production rates. Work to model exposure/risk assessment based on basin, well production stage

Study Plan: monitor worker exposure, use field portable analytical methods to determine what hydrocarbons are present and what concentration, develop changes in work practices and engineering controls to reduce exposures and evaluate their effectiveness

David Bates, OSHA Area Director for Oklahoma

Enforcement activities with RCS jobs and fracking related activities

Fatality in southern Oklahoma w/VOC in tank batteries, medical examiner never gave a determined cause of death. Getting lists of tests that OSHA can share with the ME's in each state. Difficult to do enforcement unless there is a good COD.

Can't talk specifics cause a number are in contest region 8, 3 and 6 have overexposures to silica that have documented and issued citations on. Investigating complaints (two in OK) from employees, referrals from other individuals and one region is doing follow-ups to previous citations that were issued.

Are citations issued to service companies, E&P's, etc.? Ones he is familiar with is the service companies.

One in OK was unusual, it was a mineral company that accepts the frac sand by rail spur...downloading from railcar into truck going onto frac sight. Truck overfilled and was clogged...employees were 2x/3x over the PEL. Were able to engineer it out with controls.

Other one was a traditional frack job...compliance officer that did investigation will be here this week...sampled for full shift, overexposure to sand king operator and blender operator. Was a 1.5x PEL overexposure...administrative and operational controls could have prevented it. The two people were wearing respirators, but were still overexposed.

OSHA and company can do side-by-side monitoring...can be scheduled to do so.

OSHA looks at all aspects, respirator program, fit testing, engineering controls.

How does industry go about that is compliant with what OSHA wants? Sampling data, scientific data is the key, to show that it is effective.

Jonathan Berr and Kelly Schnapp, OSHA

Kelly- started with OSHA four months ago; Tina Jones was the prior director, office of science and technology assessment

Commodity is information; emerging and new information, once found it is assessed and what is the target audience and what do we hope to change with this info. Next work with the other units on how to move forward. What comes out is documents that goes out to the public; internally they support the inspectors (something new, questions to ask). Dr. Michaels will be talking about some new changes tomorrow.

Jonathan- OSHA is looking to stay committed on how they interact with STEPS; looking to stay committed on how it is more applicable to the worksites. More recently with the other hazard alert that will be out today or tomorrow, hazards that are present outside of silica at hydraulic fracturing sites. Asked STEPS to give input on how to get the message across and have a larger impact to the industry. Moving forward, one of the larger operations of the office is to maintain a group of Safety & Health Bulletins that stretch back to the early 80's. Potential issues with NORM that are creeping up out in the field...OSHA doesn't have the data right now, but by working with STEPS to raise awareness and determine issues, could be dealt with accordingly. If anyone is interested and data willing to share, OSHA would be happy to have that info and would like to head a team to create that document. Within the objective of the alliance, the e-Tool for oil/gas extraction industry...some info is dated and want to bring together a team to overhaul the e-Tool. E-Tool will become mobile friendly.

Mike Marshall with OSHA, Director of Enforcement Programs- PSM Coordinator

Kenny Jordan- AESC; 850 member companies throughout the US

One of the things industry needs to do is protect workers, but there is a lot of misinformation to the press out there. As part of communication issue, one thing we need to look at is developing talking points, having key contacts the press can call when there is an issue. AXPC, IPAA, Energy in Motion are groups that are responding to issues within the media right now.

Wanna be compliant, wanna protect workers, but need to be able to speak to the press in a way that has a consistency of message.

Alliance is being signed tomorrow morning.

John and Julie Loftus, Orsom Productions, [www.orsomproductions.com](http://www.orsomproductions.com)

Talking about their books and how they fit into the oilfield; families encouraged them to build something to help support and foster on what their families do at home.

Next meeting sometime in March or April

Dismissal 528p