

Proposed Amended Rule 1401

Working Group Meeting #1

June 1, 2017

Background

- Rule 1401 amended in June 2015 to reference the 2015 OEHHA Guidelines for estimating health risk
- 2015 amendments to Rule 1401 included special provisions for spray booths and gas stations that allowed:
 - Use of previous version of the SCAQMD Risk Assessment Procedures for Rules 1401 and 212 which is based on the previous OEHHA Guidelines
 - More time to understand potential permitting impacts of 2015 OEHHA Guidelines for estimating health risk
- Adopted resolution committed staff to return to the Board with specific proposed regulatory requirements and/or procedures

2015 OEHHA Guidelines

- In 2015, OEHHA revised its guidelines for estimating health risk – applies to all air agencies throughout California
 - Revisions accounted for child specific factors such as age, weight, and breathing rates
 - Result is an increase in the estimated cancer for residential and sensitive receptors of about 2.3 times higher, and even higher for multi-pathway contaminants
- Estimated increase in cancer risk, even though no increase in toxic emissions
- Slight change in estimated cancer risk for worker receptor (not affected by child-specific factors)

Rule 1401 Key Requirements

- Rule 1401 is an “umbrella” rule that establishes requirements for all new and modified permits
- Ensures as new or modified equipment or sources are permitted, they meet specific health risk levels for toxic air contaminants
- Permits are not issued unless the permitted equipment or sources meets the following cancer risk thresholds:
 - <1 in a million without T-BACT* (R1401)
 - <10 in a million with T-BACT* (R1401)
 - <1 in a million near a school - regardless of TBACT (R1401.1)

* T-BACT is Toxics Best Available Control Technology

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Overview of 2015 Amendments to Rule 1401

Overview of Rule 1401

2015 Amendment


- The 2015 amendments to Rule 1401 focused on potential permitting impacts from incorporating the 2015 OEHHA Guidelines
- SCAQMD staff evaluated ~4,000 permits that were issued between October 2009 to October 2014 to understand potential impacts of the 2015 OEHHA Guidelines
- Based on this analysis, staff found that new or additional pollution controls were possibly needed and/or additional time needed to understand potential impacts for two source categories:
 - Coating and solvents used in spray booths; and
 - Retail gasoline dispensing stations

2015 Analysis of Permitting Impacts for Spray Booths with 2015 OEHHA Guidelines

- Reviewed 1,400 spray booth permits between 2009 and 2014 to predict potential impacts
- To estimate potential impacts staff used the following approach:
 - Multiplied the cancer risk estimated in the permit by 2.3 (or by 6 if the toxic air contaminant had a multi-pathway factor)
 - If recalculated cancer risk > 1 in a million (no T-BACT) or >10 in a million (with T-BACT) permit was flagged as potentially impacted
- Review indicated that ~10% of spray booths potentially could require additional controls to meet Rule 1401 thresholds
- Additional analysis was needed to more accurately assess estimated cancer risk to better understand potential permitting impacts

2015 Analysis of Permitting Impacts for Retail Gasoline Dispensing Stations with 2015 OEHHA Guidelines

- Reviewed permits from 2009 to 2014 to assess potential impacts
 - Approximately 3,300 retail gasoline stations in the district
 - Approximately 33 permit applications per year for new facilities
- In March 2015, SCAQMD staff received new information from CARB regarding speciation of emissions from gasoline dispensing
- Additional time was needed to assess the effects of this new information and how it could affect new and modified retail gasoline dispensing facilities along with the 2015 OEHHA Guidelines

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Potential Impacts of 2015 OEHHA Guidelines for New and Modified Spray Booths

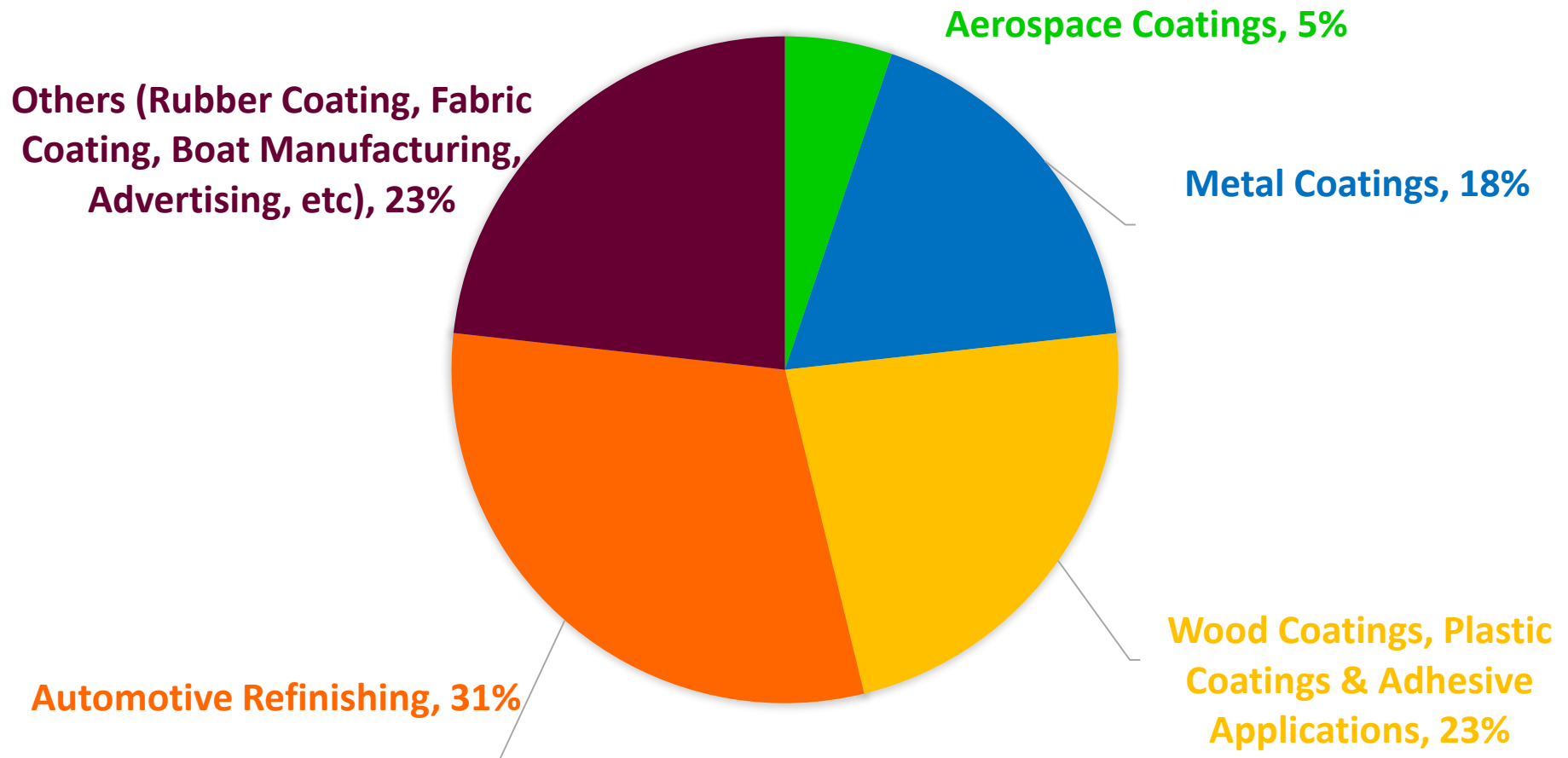
Background for Further Analysis of Spray Booths

- Purpose of analysis was to conduct a more detailed review of permits issued for spray booths to better estimate potential permitting impacts with the 2015 OEHHA Guidelines
- SCAQMD staff conducted a detailed review of 327 permits issued for spray booths to better identify if additional pollution controls are needed
 - Sample size with 95% confidence level +/- 5% error (327 out of ~1,400 permits)
 - Random sampling, every 4th permit

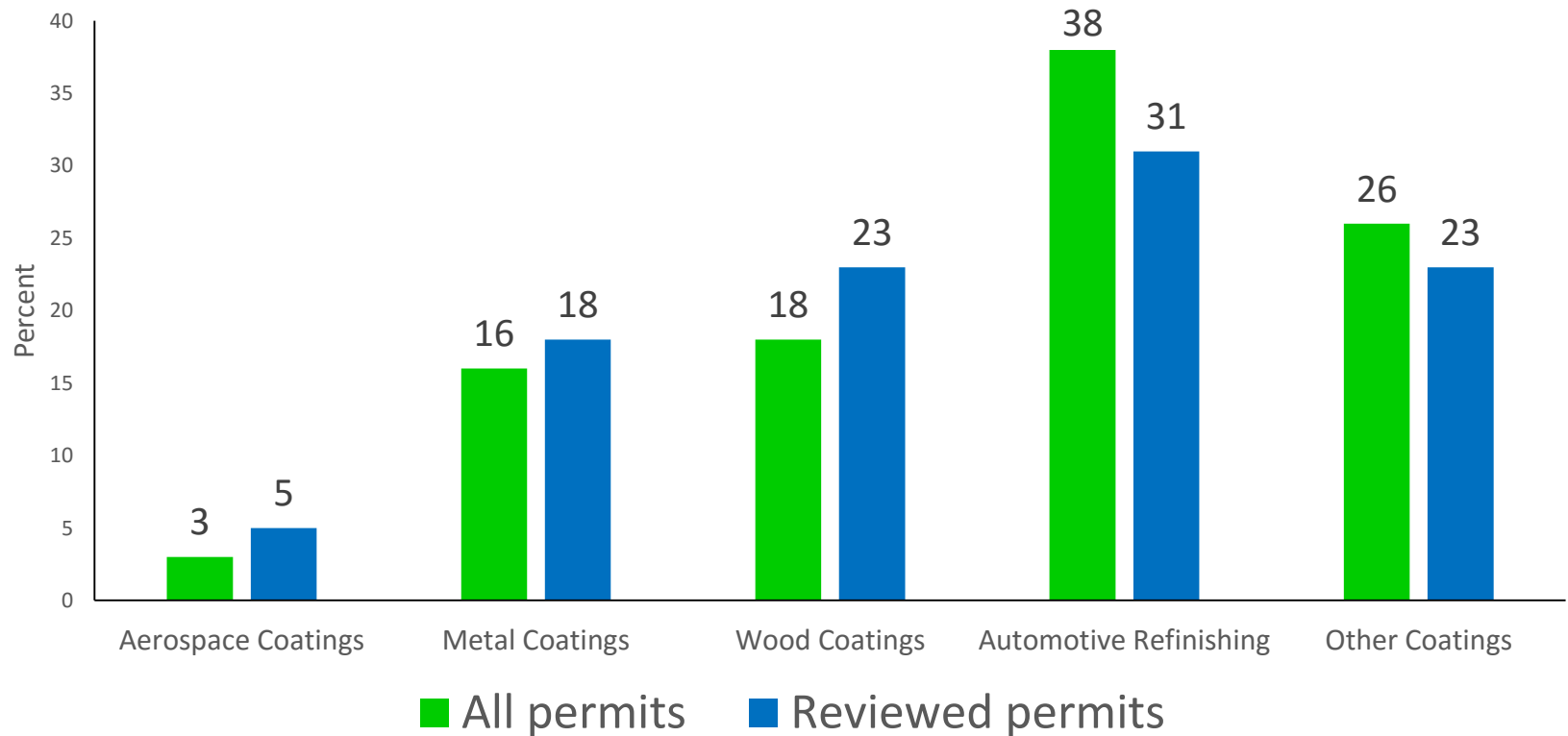


Evaluation of Spray Booth Permits by Industry

TYPE OF INDUSTRIES (TOTAL = 327 PERMITS)



Comparison Between Reviewed Permits and All Permits (Percent)

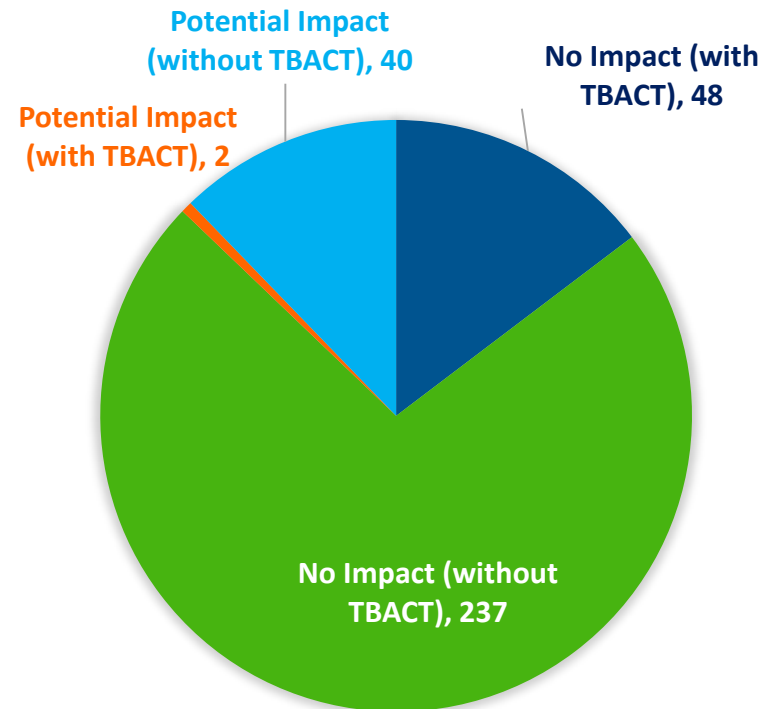


The 327 permits reviewed were representative of the distribution of industry categories for all spray booth permits

Potential Impacts of 2015 OEHHA Guidelines on Spray Booths

Out of 327 spray booth permits

- No additional controls expected for 285 permits
 - 237 permits no air toxics or estimated risk < 1 in a million (without T-BACT)
 - 48 permits with T-BACT and remain < 10 in a million
- Additional analysis needed to assess if additional controls needed for 42 permits
 - 40 permits currently without T-BACT where estimated risk may be > 1 in a million
 - 2 permits with T-BACT may be > 10 in a million



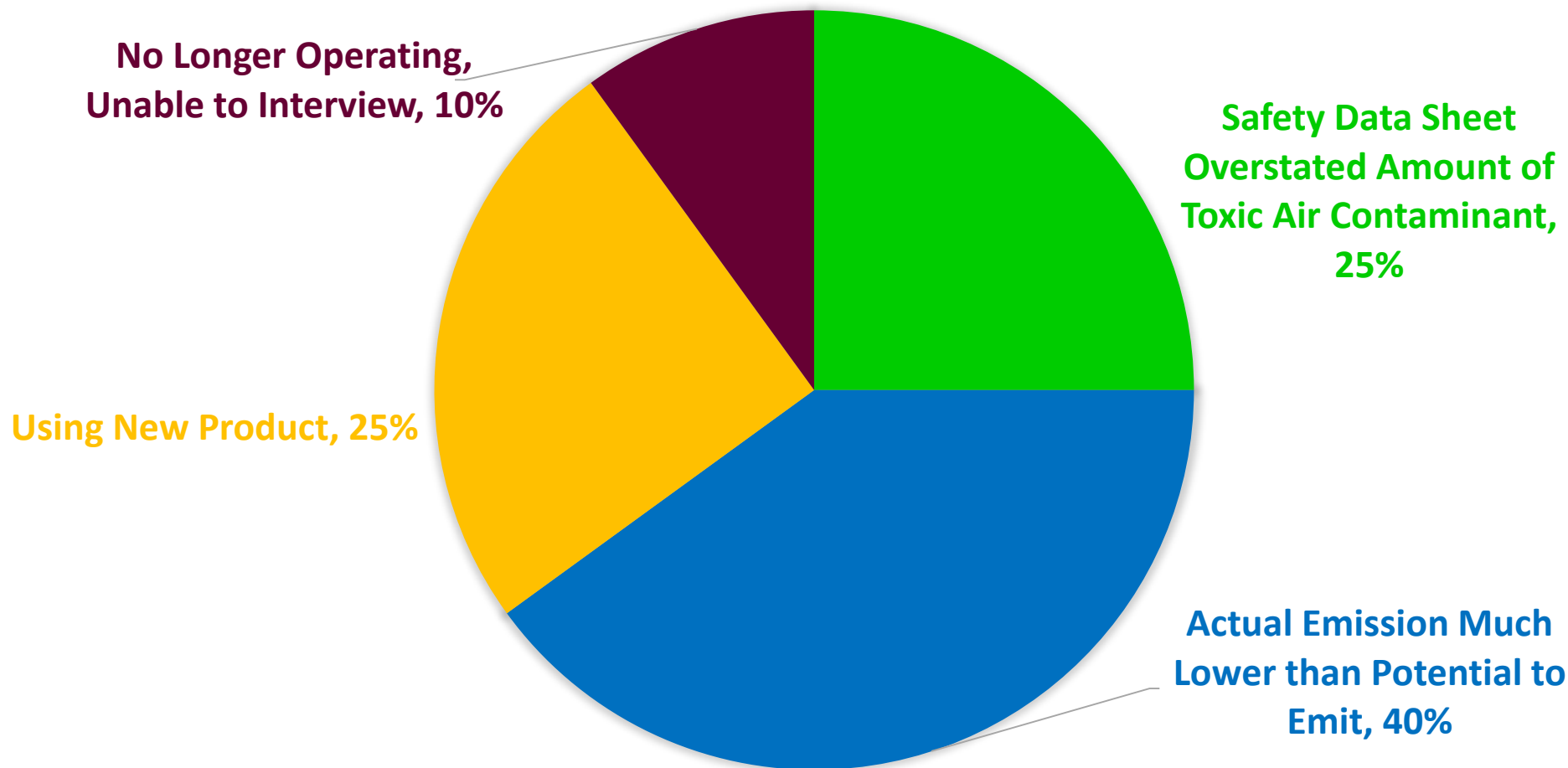
Permits with T-BACT

- 2 spray booth permits with HEPA were for aerospace coatings containing hexavalent chromium
 - Based on permit, with 2015 OEHHA Guidelines ULPA would be needed to stay under 10 in a million with same throughput
- For the 50 permits that were permitted with T-BACT, no additional pollution controls needed for 48 permits using coatings containing hexavalent chromium or other metals
- Implications
 - Small percentage of applicants might be asked to use ultra low penetration air (ULPA) filter instead of HEPA filter or limit throughput

Permits without T-BACT - Key Toxic Air Contaminants

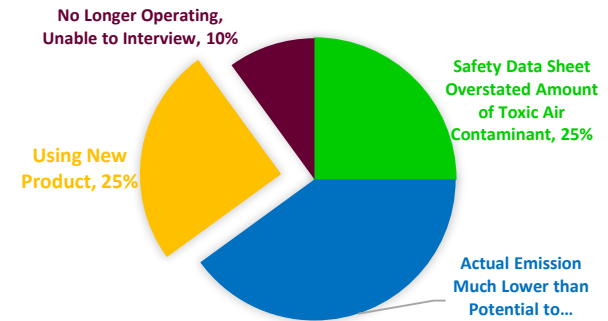
- Out of the 327 permits, 277 are permitted without T-BACT including 40 that had an estimated cancer risk over 1 in a million with the 2015 OEHHA Guidelines:
 - Ethyl benzene as sole risk driver (72%)
 - Formaldehyde as sole risk driver (8%)
 - Ethyl benzene + formaldehyde (8%)
 - Ethyl benzene + nickel (6%)
 - Ethyl benzene + others (6%)

Permits without T-BACT - Analysis of 40 Permits Potentially Affected by 2015 OEHHA Guidelines



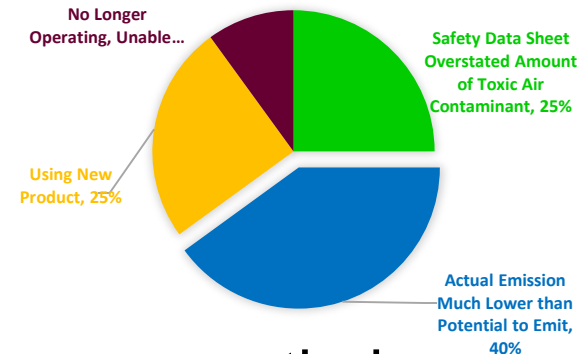
Permits without T-BACT – Using New Products

- No longer using coatings that contain a toxic air contaminant
 - Opted to utilize a new coating
 - Product had been reformulated
- Reformulated coatings typically replace the aromatics that contain trace quantities of ethyl benzene
- Implications
 - New applicants would not be impacted



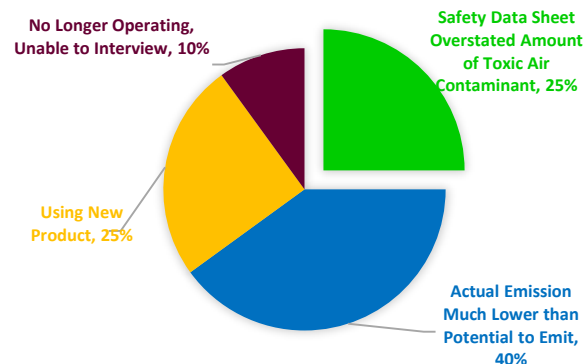
Permits without T-BACT - Actual Emissions Much Lower than Potential To Emit

- Actual usage << Potential to Emit for toxic air contaminants
 - Spray booths use multiple coatings and most coatings do not contain a toxic air contaminant; the facility may use near their overall use limit but not come near their limit for coatings that contain toxic air contaminants.
- Implications
 - Reduce Potential to Emit when permitting for coatings that contain toxic air contaminants



Permits without T-BACT - Safety Data Sheet Overstated Amount of Toxic Air Contaminant

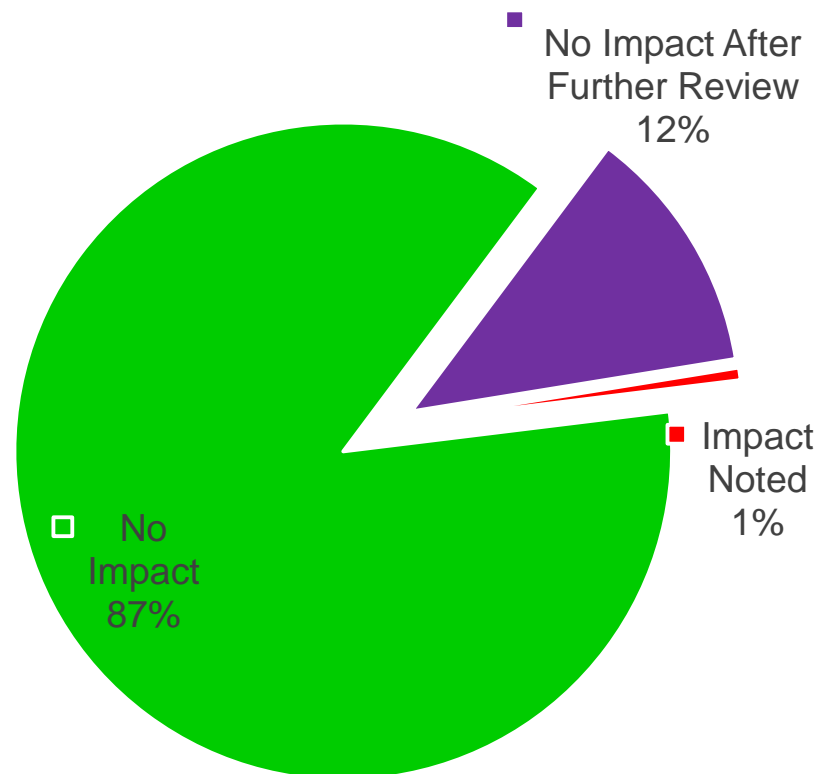
- Coatings with ethyl benzene listed in concentrations between 1 and 5 percent in Safety Data Sheet
- Confirmed with coating suppliers that actual ethyl benzene content is significantly lower for the final formulated product(s)
 - Typically between 0.2 and 2.5 percent
- Implications
 - Manufacturers to provide a more accurate estimate with products using ethyl benzene
 - Users may consider migrating to reformulated coatings / new coatings with lower or no ethyl benzene content



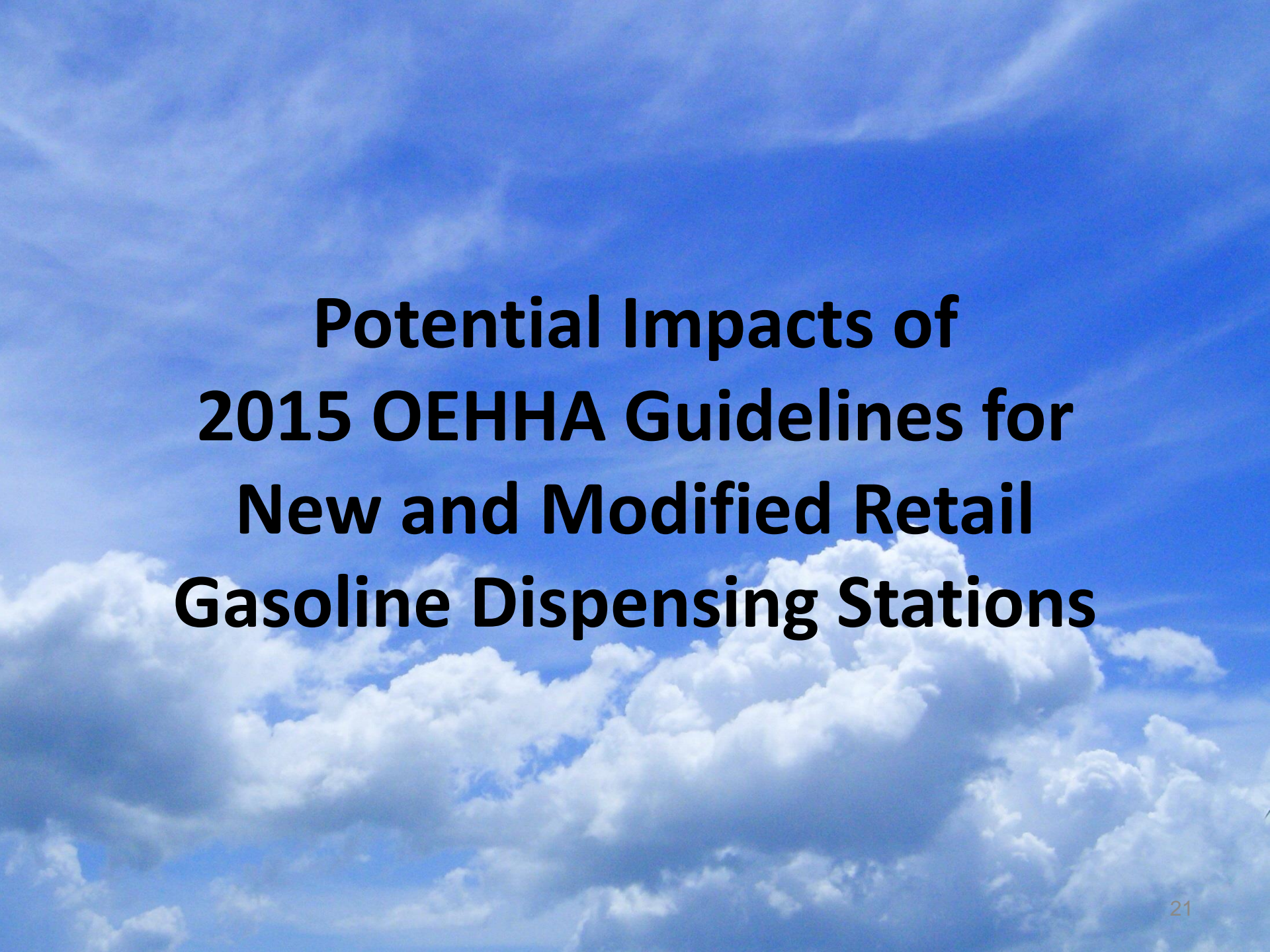
Summary of Spray Booth Review - 2017

If 2015 OEHHA Guidelines are used for spray booths,

- 87% of spray booth permits, no impact expected
- 12% of spray booth permits, more refined assumptions would eliminate need for pollution controls
- ~1% of spray booth permits may need to upgrade filters in pollution controls from HEPA to ULPA



Staff Recommendation: Remove exemption and reference Revised SCAQMD Risk Assessment Procedures (Version 9.0) for spray booths

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Potential Impacts of 2015 OEHHA Guidelines for New and Modified Retail Gasoline Dispensing Stations

Gas Station Review - Emission Factors

Process	Current Controlled Gasoline Emission Factor (lbs/1,000 gal)	Proposed Controlled Gasoline Emission Factor (lbs/1,000 gal)
Loading	0.42	0.15
Breathing	0.025	0.024
Refueling	0.32	0.42
Spillage	0.24	0.24
Hose Permeation	None	0.009

Gas Station Review - Speciation

TAC	Current Weight Percent	Proposed Weight Percent
Benzene (vapor)	0.30%	0.46%
Ethyl benzene (vapor)	0.118%	0.11%
Naphthalene (vapor)	0%	0.00044%
Benzene (liquid)	1.00%	0.71%
Ethyl benzene (liquid)	1.64%	1.29%
Naphthalene (liquid)	0.14%	0.17%

Gas Station Review – Next Steps

- Staff is working on sensitivity analyses to streamline HRA methodology (i.e. only analyzing benzene, ethyl benzene, and naphthalene)
- Staff is developing the screening tables and analyzing the impacts to retail gasoline stations
- Will provide more information at next working group meeting

Updating Rule 1401 - Table I

- Table I lists the toxic air contaminants used to estimate health risk
- Proposed revisions to be more consistent with the current list used by OEHHA
- Staff analyzing potential permitting impacts and will report at the next Working Group Meeting

CAS #	NEW SUBSTANCES TO BE ADDED
105-60-2	caprolactum
463-58-1	carbonyl sulfide

CAS #	ADDED HEALTH RISK VALUES
106-99-0	1,3-butadiene (acute)
1333-82-0	chromic trioxide (cancer)
1101	fluorides (cancer)
584-84-9	toluene-2,4-diisocyanate (acute)
91-08-7	toluene-2,6-diisocyanate (acute)

CAS #	CLARIFICATIONS
75-35-4	1,1 dichloroethylene (listed as vinylidene chloride)
101-68-8	methylene diphenyl isocyanate (typo)

Updating Rule 1401 Table I (Cont.)

- Already regulated compounds
 - Criteria pollutants
 - Parent compounds already in Table I, risk values same as parent compounds

CAS #	NEW SUBSTANCE TO BE ADDED
630-08-0	carbon monoxide*
10294-40-3	barium chromate**
13765-19-0	calcium chromate**
10588-01-9	sodium dichromate**
7789-06-2	strontium chromate**
13530-65-9	zinc chromate**
319-85-6	hexachlorocyclohexane, alpha**
319-85-7	hexachlorocyclohexane, beta**
10102-44-0	nitrogen dioxide*
10028-15-6	ozone*
7440-62-2	vanadium (fume or dust)***

*Criteria pollutant

**Already in Table I; Revise to include a more detailed breakdown

***Determined as vanadium pentoxide



Reference Documents for Risk Assessment Procedures

- SCAQMD Risk Assessment Procedures (Version 9.0) revised for spray booths and retail gas stations
- Attachment N updated for new risk values

Schedule

- Jun – Jul, 2017 Working Group meetings
- July 2017 Public Workshop
- July 7, 2017 Set Hearing
- Sep 1, 2017 Public Hearing

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