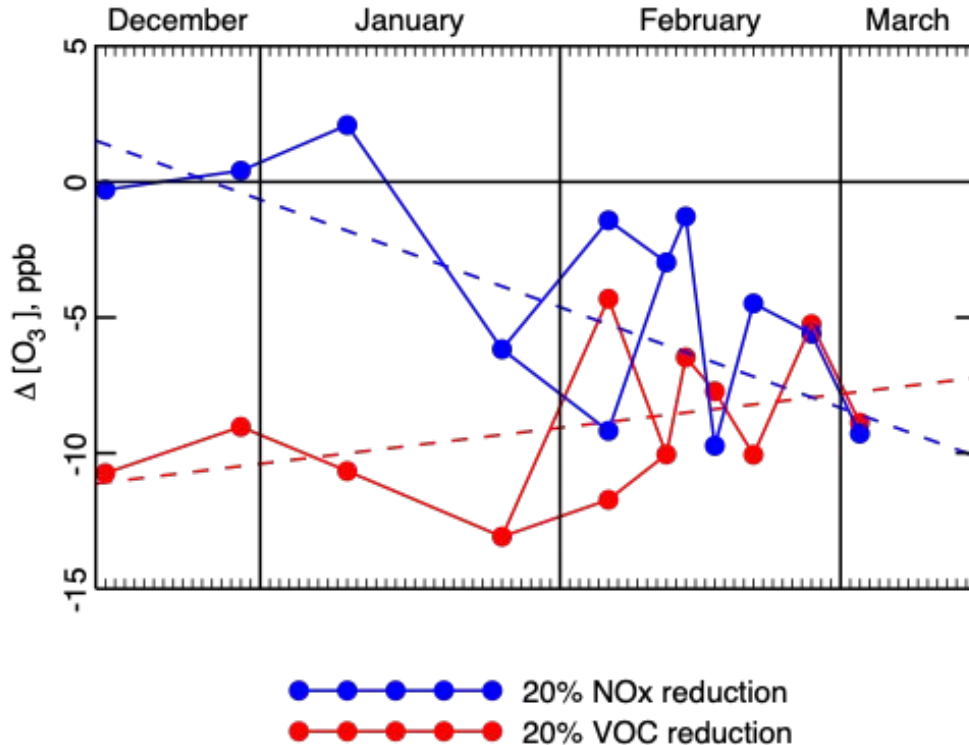


# Factors Affecting Future Emissions

Uinta Basin 2023 - 2033



# VOC and NOx effects on Ozone Formation (Back of The Envelope!)



Marc Mansfield, unpubl.

# Federal Rules

Federal Implementation Plan – Effective January 2023

- By 2033 VOC emissions reduced by an estimated **23,000 tpy** (about 20%)
- Affects 75% of wells in UB, many uncontrolled
- Semi-annual LDAR

EPA Methane Rule (0000b and 0000c proposed Nov 2021) and Supplement (Proposed Nov 2022)

- By 2033 estimated VOC reductions (**1m tpy\*7%**) ~ **7,000 tpy**
- Restrictions on flaring
- No-bleed controllers
- Quarterly LDAR

BLM Methane Waste Prevention 2023...??? (\$385,000 worth of natural gas per year)

# Non-Regulatory Efforts

- Office of Energy Development-Industry collaborative flyover monitoring
- Other industry LDAR work
- Industry equipment upgrades
  - Pneumatic controllers, pumpjacks...
- Hauler truck engines
- User-controlled sources (e.g. thief hatch closure)

# Less Regulated Sources

- Evaporation ponds (8,000 - 25,000 tpy VOC)
- Gathering and distribution network



# Uinta Basin Monitors

## Ozone 2023

8-hr*	Dinosaur	Myton	Whiterocks	Ouray	Redwash	Rangely	Vernal	Roosevelt
1 <sup>st</sup> Max	119	101	105	102	105	92	101	112
2 <sup>nd</sup> Max	108	95	99	98	95	73	88	95
3 <sup>rd</sup> Max	106	94	92	93	86	72	82	95
<b>4<sup>th</sup> Max</b>	<b>98</b>	<b>94</b>	<b>88</b>	<b>91</b>	<b>81</b>	<b>71</b>	<b>78</b>	<b>93</b>
5 <sup>th</sup> Max	96	91	87	90	80	71	78	90
6 <sup>th</sup> Max	96	89	85	90	76	65	75	89
<u>Exceed ences</u>	33	27	13	27	10	5	12	23
Design Value*	Dinosaur	Myton	Whiterocks	Ouray	Redwash	Rangely	Vernal	Roosevelt
2020- 2022	64	66	65	67	66		64	67
2021- 2023	<b>76</b>	<b>76</b>	<b>72</b>	<b>75</b>	<b>71</b>		69	<b>77</b>

\*data not yet certified

