

CDPHE Air Pollution Control Division May 2016 NFR MPO Council Presentation



Ozone Bump-up SIP RAQC Approval Process Timeline

RAQC Board Review of Individual SIP Chapters	March –June 2016
Draft Proposed SIP (All Chapters) Available on RAQC Website	May 23, 2016
Written Comments Due	May 31, 2016
Public Comment Period	June 3, 2016
Draft Proposed SIP to RAQC Board	June 3, 2016
Final Proposed SIP (All Chapters) Available on RAQC Website	June 16, 2016
RAQC Board Approval and Endorsement of Proposed SIP	June 30, 2016
RAQC/APCD Propose Plan and Regulations to AQCC	July 21, 2016

Ozone Bump-up SIP RAQC SIP Element Review Schedule

Chapter - SIP Element	RAQC Review
3 2011 Emissions Inventories	Mar. 4, 2016
4 2017 Emissions Inventory and Reasonable Further Progress (RFP)	Mar. 4, 2016
8 Motor Vehicle Inspection and Maintenance (IM) Program	Mar. 4, 2016
9 New Source Review (NSR) in Nonattainment Area	Mar. 4, 2016
6 NO _x and VOC Reasonably Available Control Technology (RACT)	Apr. 8, 2016
11 Motor Vehicle Emissions Budgets	Apr. 8, 2016
5 Photochemical Modeling and Attainment Demonstration	May 6, 2016
7 Reasonably Available Control Measures (RACM) Analysis	May 6, 2016
10 Contingency Measures	May 6, 2016
1 Background and Overview of Federal Requirements	Jun. 3, 2016
2 Air Quality Monitoring, Data, and Trends	Jun. 3, 2016
Draft Proposed SIP to RAQC Board for Discussion and Review	Jun. 3, 2016
Final Proposed SIP for RAQC Board Endorsement and Proposal to AQCC	June 30, 2016



Status of Modeling

- Initial results projected nonattainment
 - Chatfield 77 ppb
 - Rocky Flats 76 ppb
 - Model performance not optimum
 - Made several improvements
- Second round results projected attainment
 - Chatfield 73 ppb
 - Rocky Flats North & NREL 72 ppb
 - 26–32% emissions reduction, 7–12% ozone reduction
- Discovered input error
 - Corrected results coming mid-May

Reasonably Available Control Technology

- Presented draft RACT chapter April 2016
 - Proposes RACT determinations for major sources of VOC and Nox, and for certain source categories
- Some major sources and source categories require additional analysis
 - Will continue after SIP submittal
- Must determine RACT for oil & gas source category after EPA finalizes “Control Techniques Guideline” summer 2016
 - Reconcile differences between Colorado and fed rules



Questions?



May 2016 Director's Report Addendum

Elected Official Training

- All newly elected officials must review the Liability Prevention Training within three months of their election.
- Renae will send them out as soon as all new Planning Council members have been identified

FY 2017 Unified Planning Work Program (UPWP)

- **TAC received the draft FY 2017 UPWP their April 20 meeting.**
- **The final will be included in their May TAC packet for their approval**
- **The FY 2017 Budget will be presented to Finance Committee at their May 19 meeting.**
- **The FY 2017 UPWP and Budget will be provided to Planning Council for their approval at the June 2 meeting.**

VanGo Restructuring

- **One of the full-time VanGo staff turned in their resignation and their last day will be June 10. She will be leaving Fort Collins to pursue other opportunities.**
- **The MPO will be posting a full-time position for a VanGo Services Coordinator on May 6.**
- **The MPO hopes to have someone on board no later than June 6 to allow a transition.**

NFRMPO Audit

- The firm Anton, Collins, Mitchell completed their in office review for the audit and will present the draft audit to the Finance Committee on May 19, 2016. This is later than expected due to the NFRMPO system crash.
- **The final audit will be presented to Planning Council on June 2**
- There were no findings during the audit.

Regional Air Quality Council

- I have submitted my application to renew membership on RAQC.

Fix N I-25

- The N I-25 Freight Efficiency and Resiliency Project FASTLANE application was successfully submitted on April 13. The local communities and a developer committed the \$24.5M Funding Commitments requested to match the FASTLANE and TIGER grants are listed below:
 - Larimer County communities - \$5M over 5 years
 - Larimer County - \$5M
 - Loveland - \$2M over 3 years
 - Fort Collins - \$2 M over 2 years
 - Windsor - \$1M over 3 years
 - Johnstown – \$1M over 3 years
 - McWhinney – \$6M and ROW still under consideration
 - Timnath - \$0.5M over 3 years
 - Weld County - \$2M

- The N I-25 Funding Subcommittee met on April 1. The Subcommittee agreed to continue meeting until the N I-25 improvements are completed.
- The next N I-25 Funding Subcommittee meeting is scheduled for May 13 from 11:30 to 1:00 pm at Perkins at Crossroads

Local Community Training for new Bike/Auto and Bike/Pedestrian Counters

- The MPO has purchased three mobile counters that may be used by local communities to count bikes/autos (2) or bikes/pedestrians (1).
- The counters will be loaned out to local community members according to a schedule identified annually by all members.
- For more information, contact Aaron Buckley at 970-416-2309 or by email abuckley@nfrmpo.org

Mobility Committees

- The Larimer County Mobility Committee met on April 21 and the Weld County Mobility Committee will meeting on May 24.

FREIGHT Northern Colorado Plan

- The MPO is putting together a Freight steering committee of industry representatives.
- Please provide names and contact information to Becky Karasko at 970-416-2257 or bkarasko@nfrmpo.org
- The State Freight Plan consultant will be on board by Mid-April and the plan is expected to be completed in 12 months.

VanGo™

- MPO/VanGo™ staff are working with FTA and Transfort to identify a process that allows the sale of FTA funded vans without having to return 80% of the funding.
- MPO/VanGo™ staff met with CDOT Division of Transit and Rail (DTR) on May 23 and future contracts will include both FTA requirements of 4 years or 100K miles.
- The MPO turned back the 2015 FASTER funds due to the VIN issue because the grant did not allow vehicle to meet either 100K miles or 4 years.
- Both MPO/VanGo and CDOT DTR staff will work to ensure that 2016 and 2017 funds can be used by including both standards (100K or 4 years) in the grant language. CDOT has indicated that the vans being replaced may be changed up to the date of contract execution. .
- The MPO is working to update an IGA with the City of Fort Collins for the maintenance of the VanGo™ vehicles. This was identified by the FTA during the Triennial review although not a finding.

NFRMPO Documents available electronically or as paper copies

- To assist with public outreach, staff has designed and printed the following documents:
 - NFRMPO and VanGo™ Brochures
 - Annual Report
 - Mobility Postcards
 - Rider's Guide
 - Quarterly Newsletter
- Any Planning Council member who would like extra copies of any of the documents contact me at tblackmore@nfrmpo.org

APA Legislative Update

- The following bill updates are as of April 11:
- HB1008 – Roadway Shoulder Access for Buses was introduced in the Senate and assigned to Transportation – requires CDOT to consult with CSP before designating a shoulder for bus use – signed 3/9/2016
- HB1018 – Transportation Advisory Committee Procedures - provides STAC ability to provide advice and comments directly to Transportation Commission – Governor signed 3/2/2016
- HB1031 – Modify Transportation Commission Membership – referred to Transportation & Energy, refer amended to Appropriations – study 11 districts to determine whether the number boundaries should be modified – referred to referred to Appropriations 2/11/2016
- HB1067 – Regional Transportation Authority Mill Levy –Senate Committee on Transportation postponed indefinitely
- HB1138 – General Fund Transfers for State Infrastructure –House Committee on State, Veterans, & Military Affairs postponed indefinitely 2/24/2016
- HB1155 Controlled-access Highway as County Primary Road – No description yet – Assigned to Transportation 3/17/2016
- HB 1061 – Requires State Transportation Plan to include coordination with federal military installations – Governor signed 3/31
- HB1169 – Ute Representatives for Transportation Advisory Committee – signed by Governor 4/14
- HB1172 – CDOT Efficiency and Accountability Committee –introduced in Senate – assigned to Transportation 4/18
- HB1186 – MAP21 Rail Fixed Guideway Safety Fund Grant Match —introduced in Senate – assigned to Transportation 4/18
- HB1205 – Motorcycle lane-splitting –House Committee on Transportation & Energy postponed indefinitely 2/17/2016
- HB1304 – Requires CDOT to hold at least one public meeting in each TPR to state CDOT's priorities and to allow the public to testify on their top priorities and their preferred methods for raising revenue to fund priorities –referred unamended to House Committee of the Whole 4/22
- HB 1416 – State Infrastructure General Fund Transfers – signed by Governor 4/14
- SB11 – Terminate use of FASTER fee revenue for Transit – assigned to Transportation & Energy – repeals requirement for transit related use – House Committee on Transportation & Energy postponed indefinitely 2/17/2016
- SB087 – Highway-rail Crossing Signalization Fund Funding – assigned to Senate Committee on Transportation, referred unamended to Appropriations 2/11/2016
- SB100 – County Road & Bridge Tax Reduction Requirement – House Committee on State, Veterans & Military affairs postponed indefinitely 4/18
- SB123 - Free Access to High Occupancy Vehicle Lanes – Introduced in House – assigned to Transportation & Energy – postponed indefinitely 4/21

RAQC Active Bills (As of 4/29/2016)

- **HB 1332 – Concerning Modification to the Income Tax Credits for Alternative Fuel Vehicles (Reps. Duran and Rankin/Sen. Scott and Johnston)**

Bill makes changes to income tax credits available to taxpayers who purchase alternative fuel motor vehicles and trucks. Fixes a more simplified specified dollar amount for tax credits instead of the current complicated formulas. Distinguishes between purchases and leases in fixing values

of the income tax credits. Allows a taxpayer to assign the income tax credit to a financing entity for the vehicle. Removes tax credit for diesel-electric hybrids.

Status: Introduced in House on 3/2/16. Passed House Finance Committee on 4/13/16. Passed House Appropriations on 4/22/16. Passed House 3rd reading on 4/25/16. Introduced in Senate, assigned to Finance and Appropriations on 4/25/16. Passed Senate Finance and referred to Appropriations on 4/28/16.

RAQC Position: Support

- **HB 1405 – Concerning Payment of Expenses for State Departments and Agencies for Fiscal Year Beginning July 1, 2016 (Long Bill)**

After a stalemate in the Joint Budget Committee (JBC) over funding for the Clean Power Plan, the annual appropriations bill as introduced in the House did not include funding from CDPHE's Stationary Sources Fund for \$85 million and 95.7 FTE. The bill was amended and passed in the House to restore the Stationary Sources funding and FTE. The Senate then passed the bill that again eliminated the Stationary Sources Fund funding. As the conference committee, the JBC reached a compromise to restore the Stationary Sources Fund funding but removed \$112,000 targeted for implementing the Clean Power Plan.

Status: Final bill adopted by both houses on 4/15/16.

RAQC Position: Sent letter to JBC recommending restoring the Stationary Sources Fund funding.

FIX COLORADO ROADS PROJECT LIST

Project ID 228 List 2/2016	TPR	County	Corridor	Project	Project Description
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Metro Area

13	DRCOG	Adams	I-270	<i>I-270/US 85: Interchange at 62nd</i>	Reconstruct interchange at I-270 intersection at 60th Ave
7	DRCOG	Adams	I-25 N	<i>I-25 North: US 36 to SH7 PEL Improvements</i>	Continue lanes from current planned end at E470 to SH7. Combine w/ local funds for I-25/SH 7 interchange.
8	DRCOG	Adams	I-25 N	<i>I-25 North: US 36 to SH7 PEL Improvements</i>	Improvements to I-25 between US 36 and 120th. (I-25/Thornton Pkwy Ramp, Aux lanes, Reconstruct 88th Ave bridge; Add GP lane btwn 84th and Thornton Pkwy and aux lanes throughout corridor as identified in PEL)
68	DRCOG	Boulder	SH 119	<i>Bus Rapid Transit</i>	Bus pull out/queue jump lanes, signal improvements, vehicles, bus station canopies/shelters
11	DRCOG	Denver	I-25 C	<i>I-25 Central: Sante Fe to Alameda</i>	Valley Highway Phase 2.0 improvements; complete Alameda interchange; including reconstruction of Lipan, reconstruction of Alameda bridge over the South Platte and finalize ramp configuration
41	DRCOG	Denver	I-25 C	<i>I-25: Valley Highway 3.0: Sante Fe to Bronco Arch</i>	Replacement of bridges and interchanges and roadwise widening
42	DRCOG	Denver/ Arapahoe	I-225	<i>I-225:I-25 to Yosemite</i>	Complete NEPA/Design. Remove bottleneck at Yosemite, ramps, lanes, interchanges and bridge replacement at Ulster
76	DRCOG	Douglas	SH 85	<i>US 85: Widening from C_470 to I-25 in Castle Rock</i>	Operational and Safety Improvements
12	DRCOG	Jefferson	US 6	<i>US 6: Wadsworth Interchange</i>	Reconstruct interchange to improve safety and relieve congestion

Northern Colorado

29	NFR	Adams, Broomfield, Weld, Larimer	I-25 N	<i>I-25 North: SH 7 to SH 14</i>	Add a lane in each direction, interchange reconstruction, mainline reconstruction, safety and ITS improvements
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71	NFR	Larimer	I-25 N	<i>I-25 North: I-25 and Harmony Road Park & Ride Expansion</i>	Expand capacity from 200 cars to 400 cars; first deployment of CDOT paid/managed parking due to high demand
72	NFR	Weld	I-25 N	<i>I-25 North: I-25 and SH 402 Park & Ride Expansion</i>	Expand capacity from 75 spaces to 200 spaces; improve access/egress
30	NFR	Weld	SH 85	<i>SH 85: Fort Lupton to Ault /34 Interchange</i>	Corridor improvements based off Hwy 85 PEL

Colorado Springs, Pueblo and Southern Colorado

9	DRCOG	Douglas/El Paso	I-25 S	<i>I-25 South: Monument to Castle Rock</i>	Expand capacity from Monument to Castle Rock as outlined in PEL (underway). Could be expanded north depending upon PEL outcomes.
63	Pikes Peak	El Paso	I-25 S	<i>I-25 South: Monument Park & Ride Expansion</i>	Expand capacity from 240 cars to 340 - 360 cars.
64	Pikes Peak	El Paso	I-25 S	<i>I-25 South: Tejon Park & Ride Expansion & Reconstruction</i>	Expand capacity from 100 to 200 cars; safety improvements (lighting); improve access/egress for cars and buses; additional connections with regional/intercity buses
62	Pikes Peak	El Paso	I-25 S	<i>I-25 South: Monument Interchange Park & Ride</i>	Add northbound Park&Ride to I-25 Slip Ramp at Monument Interchange
17	Pikes Peak	El Paso	SH 21	<i>SH 21: Research Parkway Interchange</i>	Construct new grade separated interchange at SH 21 and Research Parkway
65	Pueblo	Pueblo	I-25 S	<i>I-25 South: I-25/US 50 Add new Pueblo Park & Ride</i>	Establish 200 space park & ride
14	Pueblo	Pueblo	US 50 W	<i>US 50: West of Pueblo</i>	Widen divided highway from 2 to 3 lanes
15	Pueblo	Pueblo	I-25 S	<i>I-25 (Pueblo): 29th Street Section</i>	New Pueblo Freeway and Part of Phase 1 ROD for new Pueblo Freeway.; Widens interstate to 3 lanes
82	Pueblo	Pueblo	US 50 E	<i>US 50: Pueblo to CO/KS Line.</i>	Finish EIS and complete corridor improvements between Pueblo and Airport

34	San Luis Valley	Mineral	US 160	<i>US 160: Wolf Creek Pass East Mobility Improvements</i>	Mobility improvements; Final project in Wolf Creek Pass EA. Design includes addition of passing opportunities, mobility improvements, and safety improvements including shoulder widening, curve corrections, rock excavation, and rockfall protection, chain station reconstruction, and fiber optic backbone installation.
19	South Central	Huerfano	US 160	<i>US 160 Mobility Improvements</i>	Corridor improvements; passing lanes and shoulder widening at select locations

I-70 Mountain Corridor

10	DRCOG	Clear Creek	I-70 W	<i>I-70 West: Westbound Peak Period Shoulder Lane (PPSL)</i>	Mirror east bound PPSL from exit 241 to Empire Jct
6	DRCOG	Clear Creek	I-70 W	<i>I-70 West: Floyd Hill</i>	Reconstruct westbound bridge at Kermit's and construct 3rd lane down Floyd Hill to bridge. 3rd lane to twin tunnels.
80	Intermountain	Clear Creek	I-70 W	<i>I-70 West: Additional Funds: Max Program</i>	Initial funding for ROD Maximum Program of Improvments
22	Intermountain	Eagle	I-70 W	<i>I-70 West: Dowd Canyon Interchange</i>	Dowd Interchange upgrade. Reconstruct interchange for safety and operations
25	Intermountain	Eagle	I-70 W	<i>I-70 West: G Spur Rd (Edwards Interchange)</i>	Phase 2 of Edwards interchange; interchange and intersection improvements
26	Intermountain	Eagle	I-70 W	<i>I-70 West: Vail Pass Auxiliary Lanes and Wildlife Overpass</i>	Complete NEPA and preliminary engineering for PEIS recommended 3rd lane (both directions) to increase safety and mobility. Install permanent water quality features, relocate bike path and complete 3 miles of roadway widening
24	Intermountain	Summit	I-70 W	<i>I-70 West: Exit 203 Interchange</i>	Exit 203 Interchange improvments. Convert roundabout single lane roundabout at the ramp termini ramp to a double lane, consider adding through lane over existing structure via striping or bridge expansion. Bridge expansion appears necessary if a wide pedestrian way is required. This will correct traffic backups on westbound I-70 in peak periods and weave from an auxiliary lane east of the ramp.
47	Intermountain	Summit	SH 9	<i>SH 9 Frisco North</i>	Completion of corridor includng minimal widening, water quality and drainage improvements and two interchange improvements (roundabout)
27	Intermountain	Summit	I-70 W	<i>I-70 West: Frisco to Silverthorne Auxiliary Lane</i>	Eastbound Auxiliary Lane from MP 203 to 205. identified in Silverthorne Interchange PEL as a safety improvement for eastbound I-70. Minimal widening required.

23	Intermountain	Summit	I-70 W	<i>I-70 West: Silverthorne Interchange</i>	Exit 205 (Silverthorne) interchange reconstruction. Install diverging diamond interchange. Extensive paving, curb, drainage. All 4 ramps affected including new capacity on westbound on-ramps
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Western Slope

18	Central FR	Park	US 285	US 285 Fairplay to Richmond Hill	Passing lanes and shoulder improvements
20	Grand Valley	Mesa	I-70 GJ	<i>I-70 (Mesa) Biz Loop</i>	I 70 B Widening; complete reconstruction and widening to meet current geometric design standards and improve safety, drainage and accesses along the corridor. Add lanes in each direction to make a 3 lane roadway section and reconstruct frontage roads. 5th St to exit 26 corridor, new capacity
33	Gunnison Valley	Ouray/ Montrose	US 550	<i>US 550: Passing Lanes North of Ridgeway</i>	Add passing opportunities and mobility improvements to US 550, north of Ridgeway. Safety improvement inclusive of shoulder widening, curve corrections, and the installation of a wildlife underpass.
67	Intermountain	Eagle	SH 82	<i>SH 82/Basalt Town Center Pedestrian Crossing</i>	Pedestrian crossing over SH 82 to connect Basalt Town Center with Park & Ride
66	Intermountain	Pitkin	SH 82	<i>SH 82/Owl Road: Grade-separated Pedestrian Crossing</i>	Pedestrian crossing over SH 82 to connect BRT Stop and Buttermilk Ski Area, improve speed and safety
28	Northwest	Garfield	SH 13	<i>SH 13: Rifle North to I-80</i>	Rifle North (MP 4-16). Reconstruct NHS and high volume truck route to add shoulders, game fence and wildlife underpasses.
21	Northwest	Grand	US 40	<i>US 40: Fraser to Winter Park</i>	Capacity improvements (4 lane facility)
35	Southwest	La Plata	US 160	<i>US 160: Durango to Bayfield Passing & Mobility Improvements</i>	Passing opportunities and mobility improvements including intersection relocation at CR 223 and a 2-lane bypass around Gem village. Safety improvements: shoulder widening, access consolidation, wildlife underpass and fencing, passing lane extension
36 37	Southwest	La Plata	US 550	<i>US 550: NM State Line to Durango Passing and Mobility Improvements</i>	Passing opportunities and mobility improvements on US 550 from top of Bondad Hill to north of Sunnyside community! Scope includes intersection improvements, shoulder widening, wildlife fencing, access consolidation and safety improvements.
32	Southwest	La Plata	US 550	<i>US 550/US 160 Connection</i>	Completes the connection of US 550 to US 160 at the Grandview interchange

Eastern Plains

31	Eastern	Weld/Morgan/ Washington/ Lincoln	SH 71	<i>SH 71: I-76 to Nebraska State Line</i>	Reconstruction of corridor to Super 2 configuration`
16	Southeast	Prowers	US 287	<i>US 287: Lamar Reliever Route</i>	Phased construction of new 2-lane road

Statewide Projects

60	Statewide	Statewide	TBD	<i>Expansion Buses for Interregional, Regional Service</i>	Allows for expansion of Bustang potentially to Pueblo, Greeley, or frequency enhancements on base routes. Allows expansion of regional commuter or rural regional service.
59	Statewide	Statewide	TBD	<i>Transit Infrastructure Bank</i>	Provide opporutnity for larger scale regional transit projects to move forward with loan based project delivery option
	Statewide	Statewide	TBD	<i>Transit Right of Way Acquisition</i>	
58	Statewide	Statewide	TBD	<i>Bus Operational Improvement to highway projects</i>	Includes transit signal priority treatments, bus stops/pullouts, queue jump lanes, and bus-on-shoulder signing/stripping
	Statewide	Statewide	TBD	<i>Road X Projects</i>	
	Statewide	Statewide	TBD	<i>Asset Management Program Projects</i>	



U.S. Department of the Interior,
Bureau of Land Management
Mail Stop 2134 LM
1849 C Street NW.
Washington, DC 20240

Submitted to BLM via www.regulations.gov

April 22, 2016

Attn: 1004-AE14

The State of Colorado appreciates the opportunity to comment on the Bureau of Land Management's ("BLM") proposed Waste Prevention, Production Subject to Royalties, and Resources Conservation (*25 Fed. Reg. 6616*, February 8, 2016), which encompass revisions to:

- 43 CFR Part 3100, Onshore Oil and Gas Leasing;
- 43 CFR Part 3160, Onshore Oil and Gas Operations; and
- 43 CFR Part 3170, Onshore Oil and Gas Production.

BLM proposes new regulations to reduce natural gas waste from venting, flaring, and leaks during oil and natural gas production activities on onshore leases. Colorado regulations also address emissions from oil and natural gas production activities. The Colorado Oil and Gas Conservation Commission ("COGCC") is charged with fostering the responsible development of Colorado's oil and gas natural resources, including the prevention of waste and the prevention and mitigation of adverse environmental impacts. The Colorado Department of Public Health and Environment, Air Pollution Control Division ("Division") develops, implements, and enforces the Colorado Air Quality Control Commission's ("Commission") air quality regulations for, among other things, Colorado's oil and gas industry. Taken as a whole, Colorado's comprehensive oil and gas regulations protect public health and the environment while ensuring responsible energy development.

Colorado believes it is very important that state and federal regulations work together and do not create duplicative or contradictory requirements. Colorado appreciates BLM's efforts to recognize state expertise and rules and align BLM's proposed regulations with existing state and federal regulations for the oil and gas industry, and provides the following specific comments on BLM's proposed rules.

I. Leak detection and repair ("LDAR")

Colorado supports BLM's efforts to reduce emissions from leaking components at well sites. Colorado has been at the forefront of well site and compressor station leak emission reductions, as well as other oil and gas emission reduction strategies. BLM cited and utilized the Commission's oil and gas regulations in developing BLM's proposed rules requiring operators to conduct semi-annual instrument-based inspections at their well sites. Colorado's state and local governments, industry, and environmental organizations expended significant resources to



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develop, and now implement, the Commission's oil and gas regulations. For example, twenty-one companies reported 4,869 leak inspections in 2014 at 1,803 well production facilities and natural gas compressor stations, identifying 1,706 leaks.¹ Colorado believes that requiring its oil and gas industry to comply with the proposed BLM rule in addition to Colorado's LDAR program could result in considerable administrative effort for all parties for little, if any, demonstrated additional environmental benefit. Therefore, Colorado appreciates and supports BLM's efforts to allow compliance with a state regulation in place of BLM regulation. Colorado believes that Colorado's robust, cost-effective LDAR program for components at well production facilities and natural gas compressor stations achieves similar or greater emission reductions than the proposed BLM LDAR program.

A. Alternatives

BLM proposes to require semi-annual leak inspections with an optical gas imaging device ("OGI") or an alternative monitoring device or program approved by BLM.

Colorado appreciates and supports BLM's effort to allow appropriate implementation of alternative and emerging monitoring technologies and methods. The Commission's regulation also recognizes technological innovation and allows alternative emissions control equipment and monitoring methods, upon approval by the Division, in order to demonstrate compliance. The Division has developed a procedure for evaluating alternative controls² or technologies to determine whether the proposed monitoring technology or method satisfies Colorado's LDAR inspection requirements.³ The approval of such alternatives by the Division does not exempt a source from an applicable emission limitation, control measure, or monitoring method, but rather acknowledges and allows for changing technologies and methods. When reviewing and approving alternative monitoring technologies and methods, Colorado suggests BLM also consider factors such as: whether the monitoring technology or method is a qualitative or quantitative detection; the scanning or viewing range; the pollutant and level detected; any limitations; and cost. Colorado also believes the approval process for such alternative control and monitoring methods or technologies should be limited to a time frame that does not render the alternative obsolete. For example, the Division reviews requests for alternative monitoring technologies and methods on a quarterly basis.

B. Step up/down

BLM proposes to allow or require operators to conduct leak inspections on an annual or quarterly basis based on the number of leaks detected in two consecutive inspections.

Colorado is concerned with the potential administrative burdens and compliance challenges of a "step up, step down" LDAR program. In developing Colorado's LDAR program, the Division

¹ <https://www.colorado.gov/pacific/cdphe/ldar-annual-reports-regulation-7-section-xvii>

² <https://www.colorado.gov/pacific/sites/default/files/AP-AlternativeEmissionsControlDeviceRequestForm.pdf>

³ <https://www.colorado.gov/pacific/cdphe/AIMM>





considered a “step down” inspection frequency based on the percentage of leaking components, but was concerned with potentially disincentivizing the detection and repair of leaks. The Division was also concerned with the potential burdens on industry of tracking components for the purpose of a step down LDAR program. Either an owner or operator would have to track potentially thousands of components at each facility, or rely on component count studies such as the GRI/EPA document from 1996, which may no longer be the most accurate information due to changes in facility development. This concern about the potential burden associated with tracking components was generally supported by industry, particularly related to recordkeeping. The Division was also concerned with the accuracy of tracking components and the challenges of compliance oversight with a step down LDAR program, such as component count and detection verification. Colorado supports proactive emission reduction activities but notes that the percentage or number of leaks may be a misleading metric for a step down program. This is due to the potential for a facility to avoid LDAR activities when the facility does not have many leaks, according to percentage or number, but may in fact emit a large quantity of fugitive emissions from leaking components. The percentage or number of leaks may not be representative of the volume or rate of fugitive emissions, and, therefore, may not require the inspection and repair of “super emitters.” Colorado ultimately decided not to include a step down inspection program in its 2014 regulations for these reasons. Colorado suggests BLM consider similar concerns when finalizing the BLM’s LDAR inspection frequencies.

C. Component – compressors, pneumatic controllers

BLM proposes to require leak inspections of all equipment and equipment components (such as separators, heater/treaters, and liquids unloading equipment) at a wellhead, all facilities that the operator operates, and all compressors located on the lease. BLM proposes to define “component” as any piece of equipment that has the potential to leak. BLM also proposes to define facility as a site and associated equipment used to process, treat, store, or measure production from or allocated to a lease and a site and associated equipment used to store, measure, or dispose of produced water that is located on a lease.

Colorado supports the inclusion of compressors in an LDAR program. The Division has found that some companies are installing compressors at well production facilities, particularly those facilities without storage tanks, to more efficiently and swiftly move natural gas into and down the gathering system. These compressors may have significant emissions, which may warrant regulation.

Colorado also supports the inclusion of pneumatic controllers as a component in an LDAR program. Natural gas actuated pneumatic controllers are designed to emit gas as part of their normal operations. However, Colorado notes increased concerns about malfunctioning pneumatic controllers and believes that including both continuous bleed and intermittent natural gas actuated pneumatic controllers in an LDAR program will help identify and reduce emissions from such malfunctions.



D. Leak threshold

BLM proposes to allow operators with less than 500 wells to conduct semi-annual leak inspections with a portable analyzer device. BLM does not propose to require the use of EPA's Method 21 or propose a threshold for detecting a leak with a portable analyzer. BLM requested comment on whether BLM should establish a leak threshold of 500 ppm or more above background for portable analyzers.

Colorado supports the option to survey and resurvey repaired components with a portable analyzer and a leak threshold of 500 ppm hydrocarbons. The Commission's regulation allows the monitoring of components with EPA Method 21, and also establishes a 500 ppm leak threshold. However, the Commission's regulation specifies 500 ppm of hydrocarbon, in contrast to 500 ppm above background. Colorado notes that a 500 ppm above background threshold will produce variable inspection, and thus variable repair results due to the potential differences in each facility's "background." Colorado, therefore, suggests BLM establish a 500 ppm pollutant specific leak threshold.

II. Storage tanks

BLM proposes to control emissions from crude oil or condensate storage vessels with VOC emissions equal to or greater than 6 tons per year ("tpy"). In establishing the 6 tpy threshold, BLM references EPA's NSPS and the Commission's rules. Colorado comments clarify that the Commission's regulation establishes a 6 tpy uncontrolled actual VOC emissions threshold for storage tanks subject to the 95% control requirement. In contrast, EPA's NSPS establish a 6 tpy controlled actual VOC emissions threshold. This threshold difference means the Commission's regulation addresses more storage tanks than EPA's NSPS because 6 tpy controlled actual emissions is equivalent to 120 tpy uncontrolled actual emissions.

The Commission's regulation also applies to an individual or series of storage vessels that contain crude oil, condensate, intermediate hydrocarbon liquids, or produced water. Colorado supports BLM's similar definition of storage vessel as an individual storage tank or tank battery and suggests BLM expand the definition beyond crude oil or condensate to also include intermediate hydrocarbon liquids and produced water.

III. Auto-igniters and combustion devices

BLM proposes to require operators to route all tank vapor gas from subject storage vessels to a combustion device, continuous flare, or sales line. BLM requests comment on whether to require operators to use automatic igniters on their flares and combustion devices.

As BLM notes, the Commission's regulation requires all combustion devices used to control hydrocarbon emissions be equipped with auto-igniters. Historically, the Division had commonly found the pilot light out at combustion control devices, with little data on the duration of the outage. Therefore, Colorado determined that auto-igniters were a cost-effective method to



prevent pilot light outages thereby reducing hydrocarbon emissions, particularly at unmanned sites subject to inclement weather, and adopted the auto-igniter requirement. Colorado supports automatic electronic spark ignition relighting systems as a means of ensuring that continuous flame pilot lights remain functional at all times and combust as much gas as possible. Colorado also requires combustion devices used to control VOC and other hydrocarbon emissions be enclosed and suggests BLM include a requirement for enclosed combustion devices.

IV. Flaring/gas capture

Colorado supports BLM's efforts to minimize waste and losses of natural gas on federal and tribal leases. The COGCC's rules and policies prohibit venting and flaring except in certain conditions or with prior approval from the COGCC Director. These rules do not utilize royalty payments⁴ as a disincentive to flaring or venting, but instead assess the potential waste of the resource and possible alternatives to avoid waste on a case-by-case basis. COGCC's rules characterize any unnecessary or excessive venting or flaring of natural gas produced from a well as a waste of resources, which is therefore prohibited. This limits the loss of royalty and severance tax in Colorado.

Similar to BLM's proposed rules, COGCC Rule 912 prohibits unnecessary venting or flaring. However, Rule 912 allows for flaring "during an upset condition, well maintenance, well stimulation flowback, purging operations, or a productivity test," which are circumstances parallel to those listed in BLM's proposed rule at §3179.4. All other instances of venting or flaring require case-by-case prior approval from the COGCC Director, as outlined in the COGCC's "Notice to Operators, Rule 912. Venting or Flaring Produced Natural Gas," ("NTO") (dated March 28, 2016). This NTO requires operators to request approval to flare after well completion. The information requested for this analysis is identical to some of the information requested to justify alternative limits on venting and flaring under BLM's proposed rule at §3179.7.

In contrast, BLM proposes a much more prescriptive framework to limit venting and flaring. For example, BLM proposes at §3179.6.a. that "[t]he operator must flare rather than vent any gas that is not captured." While Colorado does not have a similar stated preference for flaring over venting, Colorado only allows venting when the vented rate is "too low to measure" by standard oil field meters. Colorado recommends the adoption of a "too low to measure" standard in BLM's rules, which would serve the same purpose but obviate the need to flare if an undetectable amount of venting is more efficient.

In addition, both the limits proposed in §3179.6 and the extensive information requirements of §3179.7 for alternative limits may prove to be overly burdensome and less effective at reducing waste than a case-by-case approach. As such, Colorado recommends that BLM revise its rules to

⁴ The discussion on royalty-free production from the wellhead production in BLM's proposed rules at §3179.5 does not apply to Colorado because Colorado computes royalty and severance tax payments at the point of sale, which is after any used on-lease flare/vented or shrinkage may have occurred.





allow more case-by-case flexibility for operators rather than the exhaustive process currently outlined for alternative limits on venting and flaring. In many cases, operators may not need an alternative limit, but may only require a one time or temporary authorization to flare. COGCC's process with its thorough but less intensive information requirements contemplates this situation.

V. Avoid duplicative reporting and data collection

Colorado recommends that BLM allow data collection and reporting through state agency mechanisms wherever possible. This should be explicit in BLM's rules. For example, BLM proposes at §3179.8 to require measuring and reporting volumes of gas vented and flared from wells. Colorado's parallel rule is COGCC Rule 912.c., which requires that "gas flared, vented or used on the lease shall be estimated based on a gas-oil ratio test or other equivalent test approved by the Director, and reported on Operator's Monthly Report of Operations, Form 7." Allowing an operator to submit a single Form 7 to COGCC avoids duplicative reporting. Colorado recommends BLM look for similar streamlining opportunities both in drafting the final rule and in its variance process.

VI. Additional technical points for clarification and recommendations

1. BLM uses the term "development" several times in the rule discussion. Colorado interprets "development" to mean that the well and facilities are in or related to an existing field with infrastructure and pipelines within reasonable proximity. Due to the importance of this term, Colorado requests BLM define "development" for purposes of BLM's rule.
2. Under proposed §3160.3-1, if the Application for a Permit to Drill (APD) is not issued due to pipeline capacity when there are drilling commitment clauses as part of a Federal Unit or CA, Colorado is unclear whether the Federal Unit or CA will be extended to allow for pipeline construction. Colorado is concerned that this scenario could limit resource development and the efficiency of concurrent development because full field development is dependent on a number of wells to provide the economic justification for constructing pipeline infrastructure. Further, Colorado is unclear how lease and contractual commitments would be addressed if APDs are not issued and wells not drilled. Colorado recommends that BLM provide clear guidance on how it intends to handle these APDs and delayed completions.
3. Under proposed §3160.3-1(j), it appears that the BLM's "Waste Minimization of Natural Gas Plan" submitted with the APD will be an independent plan, rather than part of a global waste plan included with the E&P Waste Management Plan submitted as an APD attachment. In contrast, COGCC evaluates each flaring and venting situation on a case-by-case basis using the APD Form 2, Oil and Gas Assessment (OGLA) Form 2A, and Completion Interval Report Form 5A to show compliance with Rule 805.b. "green completions" and Rule 912.b. for post-completion flaring and venting. Each of these COGCC forms and rules represent a different stage of development. Operators report to COGCC as a project develops through various drilling, completion and production stages.





Colorado believes that placing drilling and completion conditions in a separate document, BLM's Waste Minimization of Natural Gas Plan complicates regulating and managing compliance. Colorado suggests that BLM include all drilling and completion items as an integral part of the BLM's APD, and be included in the field permit.

4. Under proposed §3162-3.1(j), Colorado believes obtaining the requested detailed information during a pre-planning stage may be difficult. The proposal's prescriptive nature may limit BLM's ability to obtain information directly related to the APD's individual details and such a plan would be "conceptual" only. For example, Colorado has found that well flows vary widely even within a single field. Therefore, predictions about well flowback, the effectiveness of the hydraulic fracture treatment, the gas content of the oil, and other completion uncertainties can be difficult until after completion. Due to these uncertainties, Colorado is unclear how BLM will judge and administer the APD "conceptual" Waste Minimization of Natural Gas Plan in line with actual construction as well as how waste will be managed post-completion.

Colorado suggests that BLM focus §3162-3.1(j) on the §3162.3-1(j)(4)(v), operator certification at the APD stage. Colorado believes BLM's intent is to encourage early gas capture planning. Operators certifying that they have had discussions with the gas gathering company would fulfill this objective without encumbering both BLM and the operator to an APD "conceptual" Waste Minimization of Natural Gas Plan.

5. Under proposed §3160.3-1(j).3, BLM is requesting a map showing all existing gas pipelines within 20 miles of the well. Colorado is concerned that the distance may unintentionally define an economic distance for a pipeline connection to capture gas and reduce resource waste. COGCC's Rule 912 Flaring and Venting Statewide - Notice to Operators, which clarifies COGCC Rule 912.b., requires operators to submit a sundry explanation, gas analysis, and economic rationale for their request to flare or vent, but does not have a distance parameter. Colorado suggests that BLM remove the distance requirement and instead request the map indicate the closest gathering line and/or point of connection.
6. Under proposed §3179, Colorado is unclear how and whether BLM will evaluate the composition of the natural gas to define economically whether the gas can be captured, transported, or flared, which then determines if the loss is "avoidable" or "unavoidable". Colorado believes that understanding product value is integral to understanding the options for gas capture and gathering, and COGCC has found the natural gas value ranges widely based on the gas composition. Colorado suggests that BLM's rules also consider the gas composition to determine the economic value of the natural gas. Colorado also suggests BLM provide guidance to operators on how to value the product including an evaluation of the natural gas composition.
7. Under proposed §3179.4, BLM does not clearly define a reporting method. In contrast, COGCC Rule 912.b. requires sundry submittal that includes a clear rationale. Colorado



suggests that BLM provide a method of reporting and requesting approval of “avoidable” and “unavoidable losses”.

8. Under proposed §3179.4(b), BLM prescriptively, and somewhat strictly, defines situations requiring gas capture. However, Colorado is concerned that in some situations operators may believe that gas capture is not required because their situation is not specifically listed in BLM’s rule. Therefore, Colorado suggests that BLM’s rules allow for flexibility and a system design review for efficiency. For example, COGCC Rule 912.b. requires an operator to submit a request for post-completion venting or flaring approval sundry with a clear rationale. COGCC reviews the request to ensure resources are not wasted and losses are unavoidable.

Some examples of situations Colorado has addressed, but would be unclear under BLM’s proposed rules include:

- a. The natural gas analysis of two samples showed a high presence of nitrogen in one and carbon dioxide in the other. The pipeline line company would not accept either. Therefore, because the gas could not be put into a pipeline, the gas would be a wasted resource and this would be an unavoidable loss.
 - b. A facility designed to ensure a separator’s resident time and design size are efficiently removing low pressure flash prior to the oil stream being transferred from separator to storage tanks. If the storage tanks are getting a high volume of flash gas, the gas will overwhelm the tanks and release gas to the emission control device. This would be an avoidable loss.
 - c. In high rate multi-well pad locations with multiple storage tanks, continuous vapor space can release to the emission control device as the tanks cycle between loading and unloading. This would be an unavoidable loss.
9. Under proposed §3179.10, Colorado is concerned that a project may not be fully developed if production limits or restrictions are imposed post-completion, resulting in a waste of resources. If the BLM defines production limits or restrictions based on third-party pipeline capacity, Colorado recommends that the BLM provide feedback to operators at the APD stage so that operators can judge the economic viability of the project prior to drilling and completing the well. Further, production limits or restrictions have potential to limit these projects’ economic rationale, which is needed to justify gathering line construction because new fields are developed in stages.

In addition, Colorado believes fee mineral owners who have acreage in a federal unit or CA that has production limits or other restriction may have a limited ability to participate and achieve the economic benefit of their minerals at a production level justifying paying for the working interest commitments within the Unit or CA. Colorado is unclear whether BLM’s rules will provide owners an opportunity to comment on production limits or restrictions placed on a project. Colorado suggests that BLM create a basis for project production limits or restrictions that do not financially restrict early field development.





Under proposed §3179.10.b, Colorado is concerned that BLM's rule suggests that an operator constructs a gathering system prior to knowing if, and at what production level, resources can be developed. BLM's intent may be directed towards existing fields where the resource is known to be present in proven or probable reserve quantities. Colorado suggests clarifying BLM's intent and distinguishing between existing field development and undeveloped resources.

10. Under proposed §3179.201 and §3179.202, Colorado is unclear whether these sections regulate oil wells that release casing head gas to balance fluid levels in a well. Specifically, BLM should clarify whether oil wells that maintain casing head pressure and vent gas will be regulated under these sections.

VII. Variance Process

Like the Hydraulic Fracturing rules (HF Rules) released in 2015, BLM's proposed rules contain a provision for a state to request a variance. Colorado believes this is an important provision in both the HF Rules and these proposed rules. Colorado began working with the BLM state office to develop a request for a state variance shortly after the HF Rules became final in May 2015, an effort that ended because of the Colorado Attorney General's lawsuit challenging the HF Rules. In addition to the lawsuit, Colorado and the BLM state office had several other challenges in negotiating the variance request. This section shares these challenges and provides recommendations for implementation of the variance request provision in these proposed rules.

A. Challenges Associated with HF Rules Variance Process

At the initial meeting between Colorado and the BLM state office, Colorado provided a side-by-side comparison of each of the provisions in the BLM HF Rules with existing COGCC rules. Many of the provisions were similar and both parties felt that a variance could potentially cover many, if not all, of the BLM rules since the Colorado rule structure was designed to achieve the same overall objective as the BLM HF Rules. After the first meeting, Colorado sent a list of questions to the BLM state office to better understand the next steps for the variance request process. These questions included:

1. What should the variance request look like? How much and what kind of information should be included? Colorado has a whole set of forms, policies, and orders in addition to the rules and regulations. Will BLM consider all of these as part of the state's demonstration of how the state is meeting the objectives of the BLM rules?
2. What form will the variance actually take? Will it be an addendum to the MOU? Will it contain only a list of the BLM provisions that the state has a variance from?
3. Will the Washington, D.C. office need to review and approve the variance before it goes into effect? How will this affect the timing of this process?



4. How will operators show that they are complying with the variance? Will BLM still inspect and enforce? Will operators need to provide a certificate of compliance to demonstrate commitment to compliance with state rules?
5. How does BLM plan to collect the information required in the regulations from operators and the state?
6. How does BLM envision the process for amending or adding to the variance in the future?
7. The BLM rules include the possibility of revocation of the variance without administrative appeal. What would the process for revocation include?

Unfortunately, the BLM state office did not have answers and was unable to get clear guidance from the Washington, D.C. office. In addition, BLM had not finalized implementation guidance for the state and field offices so evaluating whether the COGCC rules and procedures achieved the same result as the BLM HF Rules was difficult. Even though both COGCC and BLM staff were operating in good faith, the variance request process lacked clear parameters and direction from BLM. Colorado suggests BLM again consider the questions above in developing the variance process and provide early guidance to states and tribes.

B. Recommendations

BLM's standard in the proposed rules for a variance is that the state or tribal regulation or rule meets or exceeds the requirements of the provision(s) from which the state or tribe is requesting the variance. This standard appears to be more restrictive than the standard in the HF rules because it specifically references "regulation or rule" and it shifts from objective to requirements. However, Colorado is unclear whether BLM intends for a state or tribe to request a variance on a section-by-section basis, or will allow a state or tribe to request a variance on a program-basis.

For example, initial conversations between Colorado and the BLM state office concerning the HF Rules variance request focused on the potential for a variance that covered large portions of the BLM rules, despite some differences in timing and specific documentation. However, it was not clear what the BLM objectives were for the rules or the variance process that the state needed to address. Consequently, the focus ultimately shifted to look at each provision. The BLM state office received guidance that a variance would only be appropriate where the state requirements at a minimum met the BLM requirements exactly. The objective of a broader section got lost in the prescriptive requirements of each provision. Colorado is concerned that a regulatory program or purpose may similarly get lost if BLM intends to require a provision-by-provision rule comparison.

Colorado provides the following, specific recommendations concerning variance review.





1. Colorado recommends that in evaluating a variance request, BLM consider the state or tribe's relevant policies, procedures, and any other documents or guidance that the state or tribe uses to implement and enforce its rules, in addition to the rules themselves, to determine if and which portions of the state or tribe's regulatory structure meets or exceeds BLM's requirements. For Colorado's relevant agencies (COGCC and CDPHE), these additional documents serve an important role in making our regulatory programs robust, transparent, and understandable for the regulated community and the general public. Colorado recommends that BLM expand the standard to include the state or tribal regulatory program as a whole and provide clarification in the Preamble to the rules.
2. Both the HF Rules and these proposed rules require the state or tribe to identify the provisions of the BLM rules from which it is requesting a variance. Colorado recommends that BLM provide the option to grant a variance on entire sections or an entire program if the state or tribe has a regulatory program that requires the same or more stringent performance and achieves the same or better result than the BLM requirements. For example, Colorado would request a variance from BLM's entire LDAR section (§§3179.301-3179.305), instead of provision-by-provision. Because state and tribal regulatory programs vary substantially, Colorado believes BLM should explicitly include this variance option in the Preamble and subsequent guidance.

Colorado provides the following, specific recommendations concerning the variance request.

3. Colorado found the side-by-side rule comparison very helpful for the HF Rules variance conversations between Colorado and the BLM state office. The comparison provided a framework to compare Colorado's rules with the BLM rules and included discussion space for Colorado's policies, procedures, and guidance. Due to the variation between state and tribal regulatory programs and potential multi-agency jurisdiction, Colorado suggests BLM consider developing a variance request template for comparison that states and tribes could use. A template would also help states and tribes comply with the rule identification requirement in §3179.401(a)(2)(ii).
4. Concerning the provisions included in an approved variance, Colorado recommends that BLM rely on the state agencies' and tribes' enforcement and reporting programs to ensure compliance with the rules, rather than requiring additional or different reporting documentation from operators. The variance itself should serve as confirmation that the state and tribe will ensure compliance with state and tribe requirements.

Colorado provides the following, specific recommendations concerning amending the variance and appealing BLM decisions.

BLM's proposed rules do not contemplate updates or amendments to the variance, even when states or tribes adopt or amend rules that meet or exceed BLM requirements. In addition, the



proposed rules do not require notice from BLM or allow for a state or tribe to appeal either a decision on a variance or a BLM rescission or modification to a variance.

5. Colorado recommends that BLM develop a process for incorporating administrative changes to state and tribal rules into the variance as well as an amendment process for the variance when the state or tribal rules change substantively. State and tribal rules change more frequently than federal rules. If a state or tribal rule change only affects a portion of the provisions in the variance, the state or tribe should not have to renegotiate the entire variance. Colorado recommends that BLM's rules state explicitly that the variance may be amended. Colorado also recommends that BLM clearly differentiate processes for administrative and substantive changes in the Preamble and subsequent guidance.
6. Colorado recommends that BLM provide notice of and the right to appeal any revocation or denial of a variance to the state or tribe. Colorado recommends that BLM develop clear criteria for what would trigger a revocation or denial and include the list of deficiencies in the notice to the state or tribe. In addition, Colorado recommends that the BLM allow a state or tribe to appeal the revocation or denial of a variance based on the criteria and deficiencies listed in the notice.

Thank you for the opportunity to submit these comments.

Sincerely,

William C. Allison V
Director, Air Pollution Control Division
Colorado Department of Public Health and Environment

Matthew J. Lepore
Director, Colorado Oil and Gas Conservation Commission
Colorado Department of Natural Resources



Senate Bill 16-210

The Fix Colorado Roads Act

Restoring Colorado's Commitment to Transportation through Funding and Finance

Our call to action is simple: Couple a new, stable General Fund investment in transportation infrastructure with a continued CDOT commitment to dedicate a small portion of their budget to fund a \$3.5 billion **Fix Colorado Roads** bond program. **Leveraging today's new and existing revenue stream to accelerate our investment will create jobs, improve safety on our roads and keep Colorado's economy competitive.**

The Fix Colorado Roads Act proposes to:

- Authorize \$3.5 billion in bonding capacity for state transportation projects.
- Fund 45+ transportation projects throughout Colorado
 - I-70 Mountain Corridor, South I-25 Corridor and North I-25 Corridor are the signature projects.
 - Project list aligns with CDOT's list of priority projects referred to as the "228 list"
- Provide nearly \$1 billion over three years to fund CDOT's Asset Management (O&M) Program
 - Dedicate \$500 million of bond proceeds for larger asset management project
 - Allow CDOT to retain \$160M+ of General Fund transfer for three years
- Repeal the temporary, unreliable and volatile SB 228 funding mechanism
- Restore stable General Fund funding for transportation and capital construction
 - \$160M+ annual transfer equal to 5% of state sales tax revenue to the State Highway Fund
 - \$32M+ annual transfer equal to 1% of state sales tax revenue to the Capital Construction Fund.

Basis for The Fix Colorado Roads Act

Finance

- Bonding is a proven route to leverage any new and existing funds to accelerate the completion of important transportation projects throughout the state.
 - The 1999 1.7 billion TRANS Bonds program successfully delivered 28 projects statewide, including the I-25 TREX project
- Record low interest rates make bonding the most cost effective way to build our transportation infrastructure
- Allows projects to begin immediately and simultaneously — bringing positive impact to local communities across the state – without long delays for funds to become available.
- Bonding is the only way to fund large-scale projects. Without an infusion of cash that bonding provides, projects like North and South I-25 and I-70 Mountain won't be done until 2075.

Funding

- With the recent passage of HB 1416, the JBC and legislature agreed that SB 228 is flawed
- HB 1416 set a policy that required a fixed appropriation for transportation in FY 15-16 and FY 16-17, a departure from the flawed SB 228 mechanism.
- \$199 million and \$158 million appropriations in FY 15-16 and FY 16-17, respectively, for transportation set a base level of funding, not unlike any other line item in the budget
- The Act proposes that the base level of funding continue into the future with a stable mechanism to replace the SB 228 funding mechanism
- General funds for transportation will be combined with a portion of CDOT funds to deliver the \$250M annual payment that generates the \$3.5B in bonding proceeds.

CDOT's Asset Management Program

- Address CDOT concerns about impacts to CDOT's Asset Management (O&M) program
- Provide a stable source of funds to pay for the bonds
- Stipulate that significant resources to address critical asset management needs now

The Project List

- List aligns with CDOT's "228 List", their statewide priority projects
- List developed from input from CDOT's planning regions and State Transportation Advisory Council
- Up to 10% of state funding must be directed to transit projects per statutory requirements of the State Highway Fund

The Background

The status quo on our roadways threatens the vibrancy of our economy, our attractiveness as a destination for business and tourism and our quality of life. Travel times are increasing. The ability to engage in commerce becomes more challenging by the year. Tourist destinations become less attractive because it is a growing challenge to get there and back in a reasonable time.

Our transportation challenges threaten our economic competitiveness.

Coloradans know our roads are in dire need of repair and expansion – with 90 percent agreeing to that fact in recent polling. In every region of the state, fixing Colorado's roads is the most important funding priority.

Colorado devotes NO permanent and reliable general fund dollars to our transportation woes...which is one major cause of a transportation system that is failing to keep pace with our state's economic and population growth.

Current law, passed in 2009, is volatile, unreliable and temporary, enacted as a stopgap with the belief that **a permanent source of general fund dollars for roads would be enacted.**

By comparison, Utah and Texas, two of our strongest economic competitors, contribute mightily from their general fund revenues to fund and further enhance their already robust transportation infrastructure capacity program.

Until 2009, Colorado dedicated up to 11 percent of its sales and use tax revenues to transportation funding. It's time for Colorado to return to its commitment to transportation.

And voters agree. 75 percent of voters believe Colorado should find money to fund transportation projects in the state's current budget by changing spending priorities or finding new ways to save money in government programs.

Meanwhile, CDOT is to be commended for dedicating a small portion of its annual budget since 1999 to bond payments to finance and accelerate the construction of major infrastructure transportation projects throughout Colorado. **It's a model that has proven very successful and one that should be renewed.**

With interest rates at their lowest in history, the state can bond against new and existing revenue to generate approximately \$3.5 billion in bond proceeds, a lump sum which can be used to accelerate much needed transportation projects throughout Colorado.

Supporters of the Fix Colorado Roads Act

A growing coalition of business groups and local governments from every region of the state believes that 2016 is the year to fix Colorado roads.

Our Supporters So Far!

Northern Colorado Legislative Alliance
Colorado Counties Inc
Colorado Business Roundtable
NFIB
Upstate Colorado Economic Development
Weld County

Glenwood Springs Chamber of Commerce
Fort Collins Area Chamber of Commerce
Greeley Chamber of Commerce
South Metro Chamber of Commerce
Loveland Chamber of Commerce
Colorado Motor Carriers Association



North Front Range MPO Area - Project Status Updates (7 April 2016)

<u>Roadway / Segment</u>	<u>Status</u>
SH14	
I-25 to WCR23 Resurfacing	<i>Construction is mostly complete.</i>
Cache La Poudre Bridge (Mulberry)	<i>Construction is complete.</i>
US287 PR at Ted's Place	<i>In Design</i>
I-25	
SH392 to Harmony Rubblization	<i>Construction is complete</i>
Crossroads Blvd Interchange / Bridges	<i>Advertisement 19 May 2016</i>
Truck Climbing Lane	<i>Construction begins around mid-May 2016. Estimated completion is December 2016.</i>
GWRR Bridge over I-25 near US34	<i>Construction is complete</i>
Ramp Metering- Harmony Rd SB SH392 NB/SB	<i>In Design</i>
US34	
Big Thompson Canyon Flood Repair	<i>Construction will be in full swing Summer 2016</i>
Greeley Bypass Adaptive Signals	<i>Construction is complete</i>
East Greeley Flood PR	<i>Construction continues</i>
Fiber Optic / VMS / Cameras	<i>Construction is complete</i>
SH56	
Berthoud East Surface Treatment	<i>Construction is underway. Est completion June 2016</i>
SH60	
SH257 PR	<i>Construction is underway</i>
US85	
Ault to Wyoming	<i>Construction is underway</i>
Park & Ride in Evans	<i>Open- awaiting punch-list work from contractor</i>
Adaptive Signals in Greeley	<i>Construction is complete</i>
US287	
SH392 to Harmony Resurfacing	<i>Complete</i>
Harmony to Mulberry Resurfacing	<i>Construction is underway</i>
SH1 to LaPorte Bypass	<i>Utility work started</i>
Road damage near Larimer CR 17	<i>Ad est July 2016, construction complete this season</i>
SH392	
Windsor to Lucerne Resurfacing	<i>Construction is wrapping up</i>
US85 Intersection	<i>In Design. Ad est May 2016</i>
SH402	
Larimer CR 9E	<i>Ad est June 2016. Construction Aug 2016</i>



Central 70 Funding Overview

Project Overview

The Central 70 Project (formerly known as the I-70 East Project) proposes to reconstruct a 10-mile stretch of I-70 East, add one additional Express Lane in each direction, and replace the 50-year-old viaduct with a lowered and partially covered design.

Project Costs (\$1.17B)

The total cost of improvements as identified in the Environmental Impact Statement is \$1.8B. CDOT is not able to fund this entire scope and will approach the project in phases. The first phase is approximately \$1.2B. It is anticipated that the Phase 1 project will be the only near-term improvements to I-70 East until new funding sources become available. In this case, additional improvements to I-70 East will be evaluated against needs across the state.

Funding Sources

Bridge Enterprise: (see reverse side)	\$850M	DRCOG:	\$50M
SB 228:	\$180M	City of Denver:	\$37M (see below)

Additional Detail on City of Denver Contribution

In the summer of 2015 CDOT entered into an IGA with the City of Denver which provided direct funding and in-kind partnership agreements to reduce project costs. The \$37M in direct cash contributions to CDOT will be provided in the form of annual payments over the 30 year term with CDOT’s Developer partner.

1) Direct Cash Contribution:	\$37M
2) Direct Cost Savings	
a. Waiver of Permit Fees:	\$15M
b. ROW Cost Savings	\$13M
c. Devolution of Brighton Blvd	\$5M
Subtotal	\$70M
3) Other Possible Savings	
a. Risk Reduction (Includes 2 FTEs)	\$10M
b. Fill Dirt Savings (Hauling costs)	\$3M
Total:	\$83M

4) I-25 and Santa Fe

The City of Denver agreed to prioritize this \$30M project for DRCOG funding and provide 50% of the required match (est at \$3M).

Central 70 Funding Overview

Overview of Bridge Enterprise Contribution

Total FASTER Bridge Revenues through FY15: \$884.8M

- Includes FASTER fee, interest, bond proceeds, federal funds, BAB's subsidy, etc.

Forecasted Bridge Revenues: FY16 - FY36 (20 years) \$3.09B (current forecast)
 FY36-FY46 (10 years) \$2B (approximation)
 FY16-FY46 Total =\$5B

FY09-FY46 Total =\$6B (est)

Central 70 FASTER Bridge commitment: \$850M NPV

\$1.46B nominal (24% of total revenues over 30 yrs)

Total Number of Poor Bridges Addressed To Date: 121

- Includes projects that are complete, in construction, or in design phase.
- The I-70 East viaduct is the last of the original list of poor bridges identified by the 2009 FASTER Legislation to be programmed.

The Central 70 project scope includes 4 FASTER-eligible bridges summarized below.

Description	Bridge ID	Deck Area (SF)	Rating/Designation
I-70 EB & WB over RR, & 46 th Ave/City Streets <i>(Viaduct)</i>	E-17-FX	569,044	62/Functionally Obsolete – 44/Structurally Deficient(2010)
I-70 EB over UPRR	E-17-EW	11,937	40.5/Structurally Deficient
I-70 WB over UPRR	E-17-DF	11,937	40.5/Structurally Deficient
I-270 EB Ramp to I-70 EB	E-17-KR	12,497	39.4/Structurally Deficient
TOTAL		605,415	

Statewide Total Deck Area (Mar 2016): **33,100,000 SF**

Statewide "Poor" Deck Area not incl. E-17-FX (Dec 2015): **534,059 SF**

Statewide "Poor" Deck Area if E-17-FX was included (Dec 2015): **1,103,103 SF**

Central 70 project Deck Area % of Statewide "Poor" Deck Area: **55%**



STAC Summary – April 29th, 2016

- 1) **Introductions & February Minutes – Vince Rogalski (STAC Chair)**
 - a) March STAC Minutes approved with one revision.
- 2) **STIP Update – Jamie Collins (CDOT OFMB)**
 - a) STIP is out for public comment and roughly 35 members of the public came to the TC meeting to comment on it, mostly related to Central 70.
 - b) OFMB will compile all comments and our responses to them and submit to TC for their May meeting.
- 3) **Transportation Commission Report – Vince Rogalski (STAC Chair)**
 - a) Bids for Central 70 project are ongoing, with four teams still in contention.
 - b) A firm has been selected for the C-470 project, with construction to start by the end of this summer.
 - c) System risk & resiliency are a topic of growing importance as we assess the impact of major corridor closures such as I-70 and how they impact other routes.
 - d) Commissioner Berry led a meeting between TC and members of the Disadvantaged Business Enterprise (DBE) that was very fruitful for everyone.
 - e) STAC Discussion: STAC members request a more detailed proposal for how the STAC and TC will coordinate in the future in light of the recent legislation affecting their relationship. CDOT staff will bring a proposal to a future STAC meeting for discussion.
- 4) **Chief Engineer Update – Josh Laipply (CDOT Chief Engineer)**
 - a) The Chief Engineer presented a breakdown of funding for the Central 70 project and an explanation of why Bridge Enterprise funds are being used for this project.
 - b) STAC Discussion: Concern about the use of nearly 50% of BE funds for this project and its potential impact on other parts of the state.
-) **Freight Advisory Committee Update – Gary Beedy (Freight Advisory Committee Member)**
 - a) The FAC passed a resolution supporting increased funding for CDOT, particularly for freight projects.
 - b) The group is identifying its highest priority topics and will be coming to the STAC for more direct input in the months to come, including the identification of FAST Act freight corridors.
-) **Federal and State Legislative Update – Herman Stockinger (CDOT Office of Policy and Gov. Relations)**
 - a) TIGER grants are due today and CDOT is submitting our application and hoping to receive some funding.
 - b) The Hospital Provider Fee bill is being discussed in the House and will likely move to the Senate soon. There is a companion bill that will ensure that any funding from this bill will go to CDOT as laid out in SB 228.
 - c) Trans Bond II will be introduced next week and CDOT is likely to remain neutral. We appreciate that it protects our asset management process and recognizes our existing project lists.
 - d) HB 1273 (allow CDOT to enforce park and ride limits) has failed.
 - e) HB 1172 (expand CDOT Efficiency & Accountability Committee) is moving forward and likely to pass.
 - f) SB 123 (eliminate requirement for transponders on HOV / toll corridors) has failed.
 - g) HB 1169 (grant two tribes voting rights in the STAC) has passed.
-) **Statewide Plan Lessons Learned Workshop – Michelle Scheuerman (CDOT SWP Manager)**
 - a) Discussion of key issues related to the SWP, including plan integration, scheduling, etc.
-) **Other Business – Vince Rogalski (STAC Chairman)**
 - a) The next STAC meeting will be held on May 20th, 2016 – one week earlier than usual due to the Memorial Day holiday.
-) **STAC Adjourns**

CHAPTER 6 REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT) ANALYSIS

6.1 Introduction

On **DATE, 2016**, EPA published a final rule finding that Colorado's marginal ozone nonattainment area (Denver-Boulder-Greeley-Fort Collins-Loveland) failed to attain the 2008 ozone National Ambient Air Quality Standard (NAAQS) by the applicable marginal attainment deadline of July 20, 2015. Therefore, EPA reclassified Colorado's ozone nonattainment area as moderate, requiring attainment of the 2008 ozone NAAQS no later than July 20, 2018, as demonstrated by the 2015-2017 ozone seasons¹. Due to the reclassification, Colorado must submit a revised State Implementation Plan (SIP) that addresses the Clean Air Act's (CAA) moderate nonattainment area requirements, as described in the final SIP Requirements Rule for the 2008 ozone NAAQS. These requirements include Reasonably Available Control Technology (RACT) and Reasonably Available Control Measures (RACM) analyses.

EPA defines RACT as the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. Because a RACT analysis takes into account the technological and economic impacts of controls, the analysis and determination may differ from source to source and location to location.

Under 40 CFR § 51.1112² and the reclassification³, Colorado's SIP revision must provide for implementation of RACT as expeditiously as practicable, but no later than January 1, 2017, for categories of volatile organic compound (VOC) emission sources covered by an EPA Control Technique Guideline (CTG) and other major stationary sources of VOCs or nitrogen oxides (NOx) located in the nonattainment area. The VOC and NOx major stationary source thresholds for moderate nonattainment areas are the potential to emit 100 tons per year (tpy) or more.

This RACT analysis evaluates potential emission control options for source categories subject to a final CTG⁴ and major sources of VOC or NOx in Colorado's ozone nonattainment area. Colorado reviewed the CTGs and compared them to Colorado's point source inventory and existing rules. Colorado also reviewed EPA's Alternative Control Techniques (ACT), EPA's Reasonable Available Control Technology, Best Available Control Technology, Lowest Achievable Emission Rate Clearinghouse (RBLC), EPA's Menu of Control Measures (4/2/2010), federal New Source Performance Standards (NSPS), federal National Emission Standards for Hazardous Air Pollutants (NESHAP), and regulations applicable in other states' ozone nonattainment areas for potential emission control measures. Any identified potential control measures or strategies were further evaluated to determine whether the measures were reasonably available considering technological and economic feasibility, and whether the measures could be implemented by January 1, 2017. Colorado similarly evaluated Colorado's major VOC or NOx sources in the nonattainment area against the CTGs, ACT, RBLC, Menu of Control Measures, NSPS, and NESHAP for potential additional control measures.

¹ NRDC v. EPA, 777 F.3d 456, 464-469 (D.C. Cir. 2014).

² Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements; Final rule March 6, 2015, 80 Fed. Reg. 12264 at 12280, 12282, and 12316.

³ Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Several Areas Classified as Marginal for the 2008 Ozone National Ambient Air Quality Standard; Proposed August 27, 2015, 80 Fed. Reg. 51992 at 51998-51999.

⁴ EPA published a draft CTG in 2015 to reduce VOC emissions from the oil and gas industry. Colorado regulations contain requirements for the oil and gas industry that achieve equivalent or greater emission reductions. However, Colorado is not presently submitting a RACT analysis for this source category because EPA has not published the final CTG. Colorado will address the oil and gas CTG within the time frame specified in the final CTG.

6.2 VOC Source Categories Analysis

Colorado reviewed the CTGs and compared them to Colorado’s existing rules and Colorado’s point source inventory to determine whether all CTG VOC emission source categories were subject to requirements that meet or exceed the applicable RACT requirements, or whether further emission controls or requirements were economically or technologically feasible or implementable by January 1, 2017. Colorado identified: (a) the VOC source categories for which Colorado does not have subject sources, supported by Appendix 6-A; (b) the VOC source categories for which Colorado has subject sources and general and source specific RACT requirements, supported by Appendix 6-B; (c) the VOC source categories for which Colorado has subject sources and has general but not source specific RACT requirements, supported by Appendices 6-C(a)-(e); and (d) other ACT VOC source categories for which there is not a corresponding CTG or Colorado source specific RACT requirements, supported by Appendix 6-D. Colorado also reviewed the ACTs, RBLC, EPA’s Menu of Control Measures, and regulations applicable to states with the same or more stringent ozone nonattainment areas⁵ for other potentially economically and technologically feasible control technologies.

EPA has issued forty-four CTGs that recommend a particular level of control as being RACT. Colorado determined that Colorado does not have sources in some CTG VOC source categories, so a negative declaration satisfies Colorado’s RACT obligations. Colorado determined that Colorado has sources in CTG VOC source categories and has adequate general and source specific RACT requirements in Colorado Regulation 7. And, Colorado determined that Colorado has sources in CTG VOC source categories and has general but not source specific RACT regulatory requirements.

EPA has also issued twenty ACTs for sixteen categories of VOC emission sources, which do not recommend a particular emission level or control as being RACT. ACTs describe alternative controls a state may consider when developing RACT. The existence of an ACT for a source category does not trigger a requirement for states to develop or submit a RACT analysis. Of these ACTs, four are addressed by CTGs, three are addressed by federal consumer product rules, four are addressed by federal NSPS or NESHAP, and one concerns agricultural pesticides, which is not regulated by the Division. Colorado evaluated the remaining four ACT VOC source categories for which EPA has not issued a CTG and Colorado does not have source specific RACT requirements.

EPA has also issued ten ACTs for nine categories of NO_x emission sources, which are addressed by federal NSPS or NESHAP, as summarized in Appendix 6-E. Colorado did not further analyze these ACTs for purposes of this RACT analysis because the RACT analysis relates to VOC source categories.

6.2.1 Negative Declaration

Colorado does not have sources in the following CTG VOC source categories, summarized in Appendix 6-A – CTGs – No Subject Colorado Sources.

- Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Paper, Fabrics, Automobiles, and Light-Duty Trucks (EPA 1977) and Control Techniques Guidelines for Paper, Film, and Foil Coatings (EPA 2007) and Control Techniques Guidelines for Automobile and Light-Duty Truck Assembly Coatings (EPA 2008)

⁵ California Air Districts: South Coast, San Francisco Bay Area, San Joaquin Valley, Sacramento, and Ventura; Texas ozone nonattainment areas: Dallas-Fort Worth, Northeast Texas, Beaumont-Port Arthur, Houston-Galveston-Brazoria, Victoria, Corpus Christi, Austin-Round Rock, San Antonio, and El Paso; and Arizona Maricopa County. Note: some of these are serious or extreme ozone nonattainment areas.

- Control of Volatile Organic Emissions from Existing Stationary Sources – Volume IV: Surface Coating of Insulation of Magnet Wire (EPA 1977)
- Control of Volatile Organic Emissions from Existing Stationary Sources – Volume V: Surface Coating of Large Appliances (EPA 1977) and Control Techniques Guidelines for Large Appliance Coatings (EPA 2007)
- Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VII: Factory Surface Coating of Flat Wood Paneling (EPA 1978) and Control Techniques Guidelines for Flat Wood Paneling Coatings (EPA 2006)
- Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires (EPA 1978)
- Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VIII: Graphic Arts-Rotogravure and Flexography (EPA 1978)
- Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners (EPA 1982)
- Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins (EPA 1983)
- Control of Volatile Organic Compound Leaks from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment (EPA 1984)
- Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry (EPA 1984)
- Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations in Synthetic Organic Chemical Manufacturing Industry (EPA 1993)
- Alternative Control Technology Document – Surface Coating Operations at Shipbuilding and Ship Repair Facilities (EPA 1994) and Control Techniques Guidelines for Shipbuilding and Ship Repair Operations (Surface Coating) (EPA 1996)
- Control Techniques Guidelines for Flexible Package Printing (EPA 2006)
- Control Techniques for Miscellaneous Plastic Parts Coatings (EPA 2008)
- Control Techniques Guideline for Fiberglass Boat Manufacturing Materials (EPA 2008)
- Control Technique Guidelines for Miscellaneous Industrial Adhesives (EPA 2008)

Not having subject sources, Colorado conducted no further analyses of these VOC source categories.

6.2.2 Colorado Source Specific Regulation of CTG VOC Source Categories

Colorado has sources in the following CTG VOC source categories. Colorado has adopted RACT requirements the same as or similar to the CTGs into Colorado's ozone SIP in Colorado's Regulation 7, Control of Ozone Via Ozone Precursors and Control of Hydrocarbons Via Oil and Gas Emissions, last approved by EPA in 2011 (August 5, 2011, 76 Fed. Reg. 47443). These CTGs are listed below, and summarized in Appendix 6-B – CTGs Colorado Has Adopted.

- Design Criteria for Stage I Vapor Control Systems – Gasoline Service Stations (EPA 1975)
- Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils (EPA 1977)
- Control of Volatile Organic Emissions from Solvent Metal Cleaning (EPA 1977)
- Control of Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds (EPA 1977)
- Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals (EPA 1977)
- Control of Volatile Organic Emissions from Existing Stationary Sources – Volume III: Surface

Coating of Metal Furniture (EPA 1977) and Control Techniques Guidelines for Metal Furniture Coatings (EPA 2007)

- Control of Volatile Organic Emissions from Bulk Gasoline Plants (EPA 1977)
- Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed-Roof Tanks (EPA 1977)
- Control of Volatile Organic Emissions from Use of Cutback Asphalt (EPA 1977)
- Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VI: Surface Coating of Miscellaneous Metal Parts and Products (EPA 1978) and Control Techniques for Miscellaneous Metal Parts Coatings (EPA 2008)
- Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment (EPA 1978)
- Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products (EPA 1978)
- Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks (EPA 1978)
- Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems (EPA 1978)
- Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants (EPA 1983)

Colorado further analyzed each CTG in comparison to the respective Regulation 7 provisions to determine whether the provisions still meet the RACT obligation. Colorado also considered control strategies described in the RBLC, EPA’s Menu of Control Measures, and in other states’ ozone nonattainment areas.

EPA’s RBLC contains case-specific information on the “best available” air pollution technologies that have been required to reduce the emission of air pollutants from stationary sources, as provided by state and local permitting agencies. The RBLC was designed to help permit applicants and permit reviewers make pollution prevention and control technology decisions for stationary air pollution sources. The RBLC is searchable by facility state, company or facility name, pollutant, and process information, some of which relate to CTG VOC source categories. EPA’s Menu of Control Measures was developed to provide information to assist the identification and evaluation of potential control measures. The Menu of Control Measures notes that measures that are effective and cost-effective will vary by area due to the nature of and sources contributing to ozone issues in that area and that the costs of applying a control measure will also have case-specific considerations. Colorado considered the CTGs and these lists of control measures and determined that Colorado’s Regulation 7 requirements are similar to the measures described.

As detailed in Appendix 6-B, Colorado also found that Regulation 7 is similar to ozone nonattainment area regulations adopted by other states for pharmaceutical manufacturing, cutback asphalt, solvent metal cleaning, gasoline service stations, gasoline tank trucks, fixed and floating roof tanks, petroleum refineries, and natural gas processing plants. Colorado found regulations in other states that differ slightly from Regulation 7 for metal furniture surface coating VOC limits, miscellaneous metal parts coating VOC limits, can and coil coating VOC limits, inspection frequencies for gasoline loading and bulk terminals, and control efficiency for refinery vapory recovery systems. Colorado does not consider these differences to be material. Further, Colorado found that federal NSPS and NESHAP standards apply to many CTG VOC source categories.

Colorado determined that the existing provisions in Regulation 7 are still adequate and therefore RACT for all CTG VOC source categories identified in Appendix 6-B because: (1) Regulation 7 RACT for these CTG VOC source categories is consistent with controls or requirements recommended in the CTG and controls or requirements implemented in other nonattainment areas; (2) the CTG VOC source categories are regulated by federal NSPS and/or NESHAP; and/or (3) the cost for advancing a small additional increment of reduction is not reasonable, or implementable by January 1, 2017.

In the course of this review, Colorado found control strategies for some VOC source categories that are not addressed by a CTG or ACT. No additional RACT analysis is necessary for these source categories, but Colorado may consider them at a later date for potential future ozone reduction requirements.

6.2.3 No Colorado Source Specific Regulation of CTG VOC Source Categories

Colorado has sources in the following CTG VOC source categories for which Colorado's regulations contain general but not source specific RACT provisions, as summarized in Appendices 6-C(a)-(e).

- Aerospace (EPA 1994, 1997)
- Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations (EPA 1996)
- Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing (EPA 2006)
- Control Techniques Guidelines for Industrial Cleaning Solvents (EPA 2006)
- Control of Volatile Organic Emissions from Perchloroethylene Dry Cleaning Systems (EPA 1978)

In analyzing each of these source categories, Colorado considered control strategies described in the CTGs, ACTs, RBLC, EPA's Menu of Control Measures, other ozone nonattainment areas, Colorado regulation, and current industry practices.

6.2.3.1 Aerospace

Concerning aerospace, the CTG recommends specialty coating VOC contents of 60-1,230 g/L, application methods for primer and topcoats such as high volume low pressure spraying, and work practices for solvent cleaning such as closed containers, spill minimization, and hand-wipe cleaning with aqueous or VOC composite vapor pressure less than 45 mm Hg. While most regulations adopted by other states establish similar work practices, application methods, and VOC content limits, some states require emission control percentages and different VOC content limits. Colorado Regulation 7 establishes similar requirements that apply to Colorado's aerospace manufacturing sources: coating VOC limits of 3.0 to 4.3 lb/gal⁶; the use of high volume low pressure spray guns to minimize VOC emissions; solvent degreasing and cleaning requirements⁷; a prohibition of disposal of VOC by evaporation or spillage unless RACT is utilized⁸; and control techniques and work practices to reduce VOC emissions from fugitive sources such as, but not limited to, tight-fitting covers for open tanks, covered containers for solvent wiping cloths, and proper disposal of dirty cleanup solvent.⁹ Thus, Colorado's general and other source specific RACT requirements are similar to the aerospace CTG.

⁶ Colorado Air Quality Control Commission Regulation 7 Section IX.L.2.a.(ii); 3.0 to 4.3 lb/gal equates to 359 to 515 g/l.

⁷ Colorado Air Quality Control Commission Regulation 7 Section X.

⁸ Colorado Air Quality Control Commission Regulation 7 Section V.A.

⁹ Colorado Air Quality Control Commission Regulation 7 Section IX.A.7.

6.2.3.2 Wood Furniture Manufacturing Operations

Concerning wood furniture manufacturing, the CTG recommends coating VOC content limits of 0.8-2.3 kg VOC/kg solids and work practice standards such as closed containers and spray equipment maintenance for sources that emit or have the potential to emit equal to or greater than 25 tons per year of VOCs. While other states' regulations establish similar VOC content limits, application methods, and work practices, some states require other VOC content limits and emission control percentages. Colorado Regulation 7¹⁰ prohibits the disposal of VOC by evaporation or spillage unless RACT is utilized and requires all surface coating operations use control techniques and work practices to reduce VOC emissions from fugitive sources¹¹ such as, but not limited to, tight-fitting covers for open tanks, covered containers for solvent wiping cloths, and proper disposal of dirty cleanup solvent. Colorado only has one wood furniture manufacturing operation that exceeds the CTG applicability threshold and that source is a major source, thus subject to 40 CFR Part 63, Subpart JJ (National Emission Standards for Wood Furniture Manufacturing Operations). Combined, Colorado's general RACT requirements and the applicable NESHAP are similar to the wood furniture manufacturing CTG.

6.2.3.3 Offset Lithographic Printing and Letterpress Printing

Concerning lithographic printing, the CTG recommends 95% control of VOCs from heatset dryers or outlet concentration of 20 ppmv for heatset offset lithographic printing presses with the potential to emit at least 25 tpy VOC. The CTG recommends fountain solution for heatset web offset lithographic printing of 1.6 percent alcohol, and 5 percent alcohol for sheet-fed and coldset web printing with the potential to emit equal to or greater than 15 lb/day VOC. The CTG recommends cleaning materials with a VOC composite vapor pressure less than 10 mm Hg or containing less than 70 weight percent VOC and work practices such as closed containers for facilities with the potential to emit equal to or greater than 15 lb/day VOC. While other states' regulations establish similar VOC content limits and emission control percentages, some states require alternative VOC content limits or emission control percentages. Concerning Colorado's lithographic printing facilities, Colorado Regulation 7 prohibits the disposal of VOC by evaporation or spillage unless RACT is utilized¹², generally closed containers and proper disposal practices. In addition, market forces have driven lithographic printers to use low or no-VOC inks and solutions, which reduce both financial and environmental costs.¹³ Combined, Colorado's general RACT requirements and market forces are affecting VOC emission reductions, such that any additional reductions would be insignificant. Further, Colorado and Colorado's lithographic printing sources are unable to implement additional regulatory RACT requirements by January 1, 2017. However, Colorado continues to analyze these strategies for implementation after January 1, 2017.

6.2.3.4 Industrial Cleaning Solvents

Concerning industrial cleaning solvents used at facilities emitting VOC greater than 15 lb/day, the CTG recommends an organic solvent VOC content of 0.42 lb/gal or emission control of 85% and work practice standards including covered containers, proper disposal, and equipment practices. EPA

¹⁰ Colorado Air Quality Control Commission Regulation 7 Section V.A.

¹¹ Colorado Air Quality Control Commission Regulation 7 Section IX.A.7.

¹² Colorado Air Quality Control Commission Regulation 7 Section V.A.

¹³ Printers' National Environmental Assistance Center (PNEAC): Cleaner Technology Substitutes Assessment: Lithographic Blanket Washes; Vegetable Ester Blanket Washes; Digital Pre-press Reduces Waste; Alcohol Free Printing; Pollution Prevention: Fountain Solution Solutions; Pollution Prevention: Printing Inks; How to Reduce, Reuse and Recycle Lithographic Ink Wastes. <http://www.pneac.org/sheets/PrintingSector.cfm?PrintingSector=4>

intended the CTG to apply to industrial cleaning operations in the nine following cleaning categories: spray gun cleaning; spray booth cleaning; large manufactured parts cleaning; equipment cleaning; floor cleaning; line cleaning; parts cleaning; tank cleaning; and small manufactured parts cleaning. While other states' regulations also establish similar work practices, control requirements, and cleaning solvent VOC content, some states require different VOC content limits, higher emission control, and airless cleaning systems. Concerning industrial cleaning solvent use in Colorado, Colorado Regulation 7 prohibits the disposal of VOC by evaporation or spillage unless RACT is utilized¹⁴, generally closed containers and proper disposal practices. In addition, Colorado has found that industry practice has increasingly used services such as Safety-Kleen for parts cleaning and waste management as well as low VOC solvents due to solvent manufacturing trends and supply, which reduce both financial and environmental costs. For example, Safety-Kleen's heavy-duty hand wipes, spray and wipe cleaner degreaser, and heavy-duty cleaner degreaser all have VOC content less than 0.25 lb/gal. Combined, Colorado's general RACT requirements and market forces are affecting VOC emission reductions, such that any additional reductions would be insignificant. Further, Colorado and Colorado's industrial cleaning operations are unable to implement additional regulatory RACT requirements by January 1, 2017. However, Colorado continues to analyze these strategies for implementation after January 1, 2017.

6.2.3.5 Perchloroethylene Dry Cleaning Systems

Concerning perchloroethylene dry cleaning, the CTG is no longer relevant because perchloroethylene has been exempted from the definition of VOC. Regardless, the federal NESHAP, 40 CFR Part 63 Subpart M (National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities), achieves VOC control with refrigerated condensers and carbon adsorbers, leak inspection and repair, and work practices such as filter drainage, closed containers, and proper waste disposal. While other states' regulations require compliance with Subpart M, some states prohibit perchloroethylene dry cleaning system. The Division implements and enforces Subpart M; thus, Colorado is implementing RACT for perchloroethylene dry cleaning systems.

Colorado determined that Colorado's existing requirements for these CTG VOC source categories are consistent with the CTGs and satisfy RACT. In the case of lithographic printing and industrial cleaning solvents, industry practice and market forces have achieved additional VOC reductions, such that VOC control is similar to reductions achieved through the CTGs. Colorado evaluated including additional regulatory RACT requirements consistent with current practices for these industries and determined that potential additional emission reductions were minimal. Further, Colorado determined that implementation of such additional regulatory measures could not occur by January 1, 2017. Colorado statute¹⁵ requires the Division to engage participants with an interest in the subject of a potential rule. While the participant engagement does not necessarily have to occur prior to the formal rule-making process, the Division considers it particularly necessary when engaging with an industry not previously regulated, such as offset lithographic printing or industrial cleaning operations. In addition, Colorado's rule-making process establishes at least a three month timeframe between a request for hearing before the Colorado Air Quality Control Commission (Commission) and hearing before the Commission to allow for party and public participation in the rule development. And prior to submission to EPA, the Colorado legislature must review Colorado SIPs and SIP revisions, which only occurs January through May.

¹⁴ Colorado Air Quality Control Commission Regulation 7 Section V.A.

¹⁵ Colorado Revised Statute Section 24-4-103.

Therefore, due to the time needed to engage participants, for the rule-making process, for legislative review, and for a source to implement any new requirements established through the rule-making process, sources potentially subject to the CTG source categories listed are unable to implement additional RACT by January 1, 2017, as required by 40 CFR Part 51, Section 51.1112(a)(3) and Colorado's reclassification.

6.2.4 Non-CTG VOC Source Categories addressed by ACTs

Of the ACT VOC source categories, four are not addressed by a CTG, federal consumer product rule, or federal NSPS or NESHAP. Colorado's regulations do not contain source specific RACT provisions for these source categories, as summarized in Appendix 6-D.

- Alternative Control Technology Document – Organic Waste Process Vents (EPA 1990)
- Alternative Control Technology Document – Bakery Ovens (EPA 1992)
- Industrial Wastewater Alternative Control Technology (EPA 1994 (1992 draft CTG, later issued as ACT))
- Control of Volatile Organic Compound Emissions from Batch Processes (EPA 1994)

In analyzing these sources, Colorado considered control strategies described in the ACTs, RBLC, EPA's Menu of Control Measures, and in other ozone nonattainment areas.

6.2.4.1 Organic Waste Process Vents

Concerning organic waste process vents, the ACT discusses controlling VOC emissions with vapor recovery control devices and combustion control devices from process vents. The ACT addresses process vents on waste management units (i.e., distillation and stripping operations) at treatment, storage, and disposal facilities (TSDF) treating wastes with total organics concentrations of less than 10 ppmv and treatment units part of a waste management system exempt from Resource Conservation and Recovery Act (RCRA) permitting. Due to facility variability, the ACT recommends that the choice of control technology be made on the basis of costs and cost effectiveness, thus on a case-by-case basis.

6.2.4.2 Bakery Ovens

Concerning bakery ovens, the ACT discusses controlling VOC emissions with combustion control devices. The ACT addresses ovens at large bakeries producing yeast-leavened bread, rolls, buns, and other similar products (e.g., bread production 6,000 to 29,000 tpy, VOC emissions 13 to 100 tpy). The ACT suggests analyzing potential emission control options for bakeries by identifying the cost effectiveness of controls for each oven and comparing to other facilities to determine the appropriate cost effective value, thus on a case-by-case basis. Other state requirements establish different emission control percentages.

6.2.4.3 Industrial Wastewater

Concerning industrial wastewater, the ACT discusses controlling VOC emissions through waste minimization and water treatment. The ACT addresses the collection and treatment of industrial wastewater from: the organic chemicals, plastics, and synthetic fibers industry; the pesticides manufacturing industry; the pharmaceuticals manufacturing industry; and the hazardous waste treatment, storage, and disposal facilities industry. EPA intended the ACT/CTG wastewater collection and treatment control to be consistent with the subsequently published Hazardous Organic NESHAP at

40 CFR Part 63, Subparts F, G, H, and I (HON) (59 FR 19402, April 22, 1994). While addressing HAP rather than just VOC, the HON wastewater provisions are recommended as the model wastewater rule. Other state requirements include cover and inspection requirements. The Division implements and enforces the HON.

6.2.4.4 Batch Processes

Concerning batch processes, the ACT discusses reducing emissions from reactors, filters, dryers, distillation columns, extractors, crystallizers, and storage and transfer devices with condensers, scrubbers, carbon adsorbers, thermal incinerators, vapor containment systems, and operational practices. The ACT addresses batch processes in six industries: plastic materials and resins; pharmaceuticals; gum and wood chemicals; cyclic crudes and intermediates; industrial organic chemicals; and agricultural chemicals. Other state requirements establish specific control percentages.

Colorado Regulation 7 establishes work practice requirements similar to the ACTs and prohibits the disposal of VOC by evaporation or spillage unless RACT is utilized, generally closed containers and proper disposal practices.

ACTs describe alternative controls states may consider when developing RACT but do not recommend a particular level or control as being RACT. Further, these ACT VOC source categories are not also CTG VOC source categories¹⁶. Therefore, while Colorado evaluated these ACTs, Colorado is not required under 40 CFR Section 51.1112 to make RACT conclusions for these source categories. However, Colorado may continue to analyze these strategies for implementation at a later date.

6.3 Major Source Analysis

Moderate ozone nonattainment areas must implement RACT for major stationary sources of VOCs or NOx in the nonattainment area. The VOC and NOx major stationary source thresholds for moderate nonattainment areas are the potential to emit 100 tons per year (tpy) or more. As with RACT for the CTG VOC source categories, RACT is the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. Similarly, RACT for major sources must be implemented as expeditiously as practicable but no later than January 1, 2017.

Colorado reviewed Colorado's point source inventory to verify that major sources of VOC or NOx emissions in the nonattainment area are subject to requirements that meet or exceed RACT, or whether further emission controls on the sources were economically or technologically feasible or implementable by January 1, 2017. Colorado reviewed Colorado's point source inventory and found 46 major VOC or NOx stationary sources in the nonattainment area. Colorado reviewed the sources' operating permits and consulted with knowledgeable staff of the Division's permit and enforcement programs. Colorado also considered control strategies in the CTGs, ACTs, RBLC, EPA's Menu of Control Measures, NSPS, NESHAP, and Colorado regulation.

EPA's RBLC contains case-specific information on the "best available" air pollution technologies that

¹⁶ 40 CFR § 51.1112(a)(1) For each nonattainment area classified Moderate or higher, the state shall submit a SIP revision that meets the VOC and NOx RACT requirements in CAA sections 182(b)(2) and 182(f). CAA § 182(b)(2) The State shall ...include provisions ... with respect to each of the following: (A) Each category of VOC sources in the area covered by a CTG document issued by the Administrator between November 15, 1990, and the date of attainment. (B) All VOC sources in the area covered by any CTG issued before November 15, 1990.

have been required to reduce the emission of air pollutants from stationary sources, as provided by state and local permitting agencies. EPA’s Menu of Control Measures was developed to provide information to assist the identification and evaluation of potential control measures. Colorado considered these lists of control measures and determined that Colorado’s major sources are subject to requirements similar to measures described.

Colorado determined that either RACT has been determined for these sources (i.e., NSPS or NESHAP/MACT applicability, Regulation 7 RACT requirements, or BACT analyses) or that the sources are unable to implement additional control strategies by January 1, 2017, due to the time required for rule-making, permitting¹⁷, and/or source implementation, as described above. For the sources where additional, potentially feasible emission control or reduction measures cannot be implemented by January 1, 2017, Colorado continues to analyze these strategies for implementation after January 1, 2017, as noted in Appendix 6-F.

¹⁷ Operating permit application completeness determination – 60 days, operating permit or major modification application processing – 18 months, minor operating permit modification processing – 90 days. Colorado Regulation 3, Part C, Sections IV.B. IV.C., X.H.

Appendix 6-A – CTGs – No Subject Colorado Sources

Date of CTG	Description	Colorado rule	Date of Colorado adoption	Date of most recent EPA approval of Colorado Regulation 7
1977 (ACT 1994)	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Paper, Fabrics, Automobiles, and Light-Duty Trucks	Regulation 7 Sections V. and IX.	12/14/1978 and 5/22/1980	8/5/2011 (76 FR 47443)
2007	Control Techniques Guidelines for Paper, Film, and Foil Coatings	Regulation 7 Sections V. and IX.	12/14/1978 and 5/22/1980	8/5/2011 (76 FR 47443)
2008	Control Techniques Guidelines for Automobile and Light-Duty Truck Assembly Coatings	Regulation 7 Sections V. and IX.	12/14/1978 and 5/22/1980	8/5/2011 (76 FR 47443)
1977	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume IV: Surface Coating of Insulation of Magnet Wire	Regulation 7 Sections V. and IX.	12/14/1978 and 5/22/1980	8/5/2011 (76 FR 47443)
1977	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume V: Surface Coating of Large Appliances	Regulation 7 Sections V. and IX.	12/14/1978 and 5/22/1980	8/5/2011 (76 FR 47443)
2007	Control Techniques Guidelines for Large Appliance Coatings	Regulation 7 Sections V. and IX.	12/14/1978 and 12/4/1980	8/5/2011 (76 FR 47443)
2008	Control Techniques for Miscellaneous Plastic Parts Coatings	Regulation 7 Sections V. and IX.	12/14/1978 and 12/4/1980	8/5/2011 (76 FR 47443)
1978	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VII: Factory Surface Coating of Flat Wood Paneling	Regulation 7 Sections V. and IX. 40 CFR Part 63 Subpart QQQQ	12/14/1978 and 9/20/1989	8/5/2011 (76 FR 47443)
2006	Control Techniques Guidelines for Flat Wood Paneling Coatings	Regulation 7 Sections V. and IX. 40 CFR Part 63 Subpart QQQQ	12/14/1978 and 9/20/1989	8/5/2011 (76 FR 47443)
1978	Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires	Regulation 7 Sections V. and IX.	12/14/1978 and 9/20/1989	8/5/2011 (76 FR 47443)
1978	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VIII: Graphic Arts-Rotogravure and Flexography	Regulation 7 Sections V. and XIII.	12/14/1978 and 12/4/1980	8/5/2011 (76 FR 47443)
1982	Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners	Regulation 7 Section V. 40 CFR Part 60 Subpart JJJ	12/14/1978	8/5/2011 (76 FR 47443)
1983	Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	Regulation 7 Section V. 40 CFR Part 63 Subparts U, JJJ	12/14/1978	8/5/2011 (76 FR 47443)
1984	Control of Volatile Organic Compound Leaks from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	Regulation 7 Section V. 40 CFR 60, Subparts VV, VVa	12/14/1978	8/5/2011 (76 FR 47443)
1984	Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry	Regulation 7 Section V. 40 CFR 60, Subpart III	12/14/1978	8/5/2011 (76 FR 47443)
1993	Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations in Synthetic Organic Chemical Manufacturing Industry	Regulation 7 Section V. 40 CFR 60, Subparts NNN, RRR	12/14/1978	8/5/2011 (76 FR 47443)
1994	Alternative Control Technology Document – Surface Coating Operations at Shipbuilding and Ship Repair Facilities	Regulation 7 Section V. 40 CFR Part 63 Subpart II	12/14/1978	8/5/2011 (76 FR 47443)

Date of CTG	Description	Colorado rule	Date of Colorado adoption	Date of most recent EPA approval of Colorado Regulation 7
1996 (ACT 1994)	Control Techniques Guidelines for Shipbuilding and Ship Repair Operations (Surface Coating) <i>EPA Note – See also EPA-453/R-94-032.</i>	Regulation 7 Section V. 40 CFR Part 63 Subpart II	12/14/1978	8/5/2011 (76 FR 47443)
2006	Control Techniques Guidelines for Flexible Package Printing	Regulation 7 Section V. 40 CFR Part 63 Subparts JJJ, KK	12/14/1978	8/5/2011 (76 FR 47443)
2008	Control Techniques Guideline for Fiberglass Boat Manufacturing Materials	Regulation 7 Section V. 40 CFR Part 63 Subpart VVVV	12/14/1978	8/5/2011 (76 FR 47443)
2008	Control Technique Guidelines for Miscellaneous Industrial Adhesives	Regulation 7 Section V. 40 CFR Part 60 Subpart RR, 40 CFR Part 63 Subparts KK, JJJ	12/14/1978	8/5/2011 (76 FR 47443)

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Appendix 6-B – CTGs Colorado Has Adopted

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of Most Recent EPA approval of Colorado Regulation 7	Summary of Colorado Regulation 7 requirements	Summary of CTG requirements	Summary of other requirements or regulations – for comparison
1975	Design Criteria for Stage I Vapor Control Systems – Gasoline Service Stations <i>EPA Note – This document is regarded as a CTG although it was never published with an EPA document number.</i>	Regulation 7 Sections V. and VI. 40 CFR Part 63 Subpart CCCCC	12/14/1978	8/5/2011 (76 FR 47443)	Cannot dispose of VOC by evaporation or spillage unless RACT utilized Equip pumps and compressors with mechanical seals or other of equal efficiency, equip storage tanks with floating roof and vapor gathering system, routine tank inspections, submerged fill and vapor control system, load leak tight transport trucks and vapor collection system	Stage I controls, vapor balance systems, submerged fill, leak tight conditions, vapor collection systems	California: transfer vapor recovery system, vapor tight and liquid tight lines and connections, bottom fill, tank floating roof seals and covers, routine inspections, certified spill box, cargo tank vapor integrity testing, cannot purge gasoline from cargo tank to atmosphere, closed containers Texas: submerged fill, vapor control system, vapor tight transport vessels, tank control with submerged fill/vapor control system/or floating roof, routine inspections Arizona: submerged fill and pressure/vacuum valve, vapor recovery system, tank floating roof seals, routine inspections, vapor-tight and leak-tight transport vessels, control delivery vessel purge emissions 90% RBLC: stage I and II vapor recovery system
1976	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume I: Control Methods for Surface Coating Operations <i>EPA Note – Although often listed with the CTGs for historical reasons, this document does not define RACT for any source. It is a compilation of control techniques.</i>	NA – compilation of control techniques					

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of Most Recent EPA approval of Colorado Regulation 7	Summary of Colorado Regulation 7 requirements	Summary of CTG requirements	Summary of other requirements or regulations – for comparison
1977	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils	Regulation 7 Sections V. and IX. 40 CFR Part 60, Subparts TT, WW 40 CFR Part 63, Subparts KKKK, SSSS	12/14/1978 and 5/22/1980	8/5/2011 (76 FR 47443)	Cannot dispose of VOC by evaporation or spillage unless RACT utilized Fugitive VOC control – covers, closed containers, proper disposal Can coating VOC content limit 2.8 to 5.5 lb/gal Coil coating VOC content limit 2.6 lb/gal	Cans – coating VOC content limit 2.8 to 4.2 lb/gal; available control options: incineration, water-borne/high solids/powder coatings, carbon adsorption, ultraviolet curing Coils – coating VOC content limit 2.6 lb/gal; available control options: incineration, water-borne/high solids coatings	California: cans – coating VOC content 0.1-5.5 lb/gal, coating VOC content 20-750 g/l, cleaning solvent VOC content 0.21-0.23 lb/gal, may comply with 90% control, application methods, closed containers; coils – coating VOC content 1.7 lb/gal, VOC content 200 g/l, cleaning solvent VOC content 0.21-0.23 lb/gal, may comply with 90% control, application methods, closed containers Texas: can coating VOC content 2.8-5.5 lb/gal, coil coating VOC content 2.6 lb/gal Arizona: can coating VOC content 2.5-5.5 lb/gal, coil coating VOC content 2.6 lb/gal, alternative control device 90%, application methods, closed containers, spray gun cleaning practices RBLC: can – NSPS WW, compliant coatings, thermal oxidation, cleaning solvent and ink VOC content Menu: incineration, total enclosure, process modifications, VOC content limits

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of Most Recent EPA approval of Colorado Regulation 7	Summary of Colorado Regulation 7 requirements	Summary of CTG requirements	Summary of other requirements or regulations – for comparison
1977	Control of Volatile Organic Emissions from Solvent Metal Cleaning	Regulation 7 Sections V. and X.	12/14/1978	8/5/2011 (76 FR 47443)	<p>Cannot dispose of VOC by evaporation or spillage unless RACT utilized</p> <p>Control solvent cold-cleaners with covers and drainage facility; control non-conveyorized vapor degreasers with covers, safety switches, and control systems; control conveyorized degreasers with control devices, drying tunnel, safety switches, covers</p>	<p>Equipment specifications, operating requirements, minimize solvent loss, repair leaking equipment, control devices</p>	<p>California: cold cleaners use covers, dry rack, freeboard ratio or control 85-95% or enclosed design; open top and conveyorized vapor degreasers free of liquid leaks, and transfer with leak proof couplings, safety switches, freeboard ratio; VOC content limit 0.42 lb/gal; may comply with airless/air-tight cleaning system; repair leaks; closed containers</p> <p>Texas: cold-cleaning use cover and enclosed draining, open top degreasing use cover and freeboard ratio or control 85%, conveyorized degreasing control with refrigerated chiller 85% or carbon adsorption and trying tunnel</p> <p>Arizona: closed containers, internal drainage rack, impervious cover, drying tunnel, may control with control or sealed system</p> <p>RBLC: vapor condensing/recovery system, operating time limit</p>

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of Most Recent EPA approval of Colorado Regulation 7	Summary of Colorado Regulation requirements	Summary of CTG requirements	Summary of other requirements or regulations – for comparison
1977	Control of Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	Regulation 7 Sections V. and VIII. 40 CFR Part 60 Subpart QQQ	12/14/1978	8/5/2011 (76 FR 47443)	One major source – see Table 6	Process unit turnarounds operating procedures, vacuum producing system firebox combustion, wastewater separators covers, process units depressurized to flare/fuel gas system/other combustion device before opening	<p>California: control and minimize flaring, operate flares in smokeless manner, maintain flare pilot flames, routine inspections, collect vapors when depressurizing vessels, cover wastewater separators and sumps and sewer lines and process drains, control emissions from vacuum producing system, cover hot wells and accumulators</p> <p>Texas: components with water seals, closed openings, junction box vents control 90% or enclosed system, routine inspections, control steam ejector or mechanical vacuum pump vent stream 90%, control hotwell emissions, recover emissions during turnaround, equip water separator with vapor recovery system</p> <p>RBLC: MACT CC, NESHAP FF, NSPS QQQ, covered system, vapor combustor, good air pollution control practices, submerged fill</p>
1977	Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals	Regulation 7 Sections V., VI., and XV. 40 CFR Part 60 Subpart XX 40 CFR Part 63 Subparts R, BBBB	12/14/1978 and 4/9/1981	8/5/2011 (76 FR 47443)	<p>Cannot dispose of VOC by evaporation or spillage unless RACT utilized</p> <p>Equip pumps and compressors with mechanical seals or other of equal efficiency, equip storage tanks with floating roof and vapor gathering system, routine tank inspections, submerged fill and vapor control system, load leak tight transport trucks and vapor collection system</p>	Vapor collection systems, leak tight conditions, submerged fill	<p>California: transfer vapor recovery system, vapor tight and liquid tight lines and connections, bottom fill, tank floating roof seals and covers, routine inspections, certified spill box, cargo tank vapor integrity testing, cannot purge gasoline from cargo tank to atmosphere, closed containers</p> <p>Texas: submerged fill, vapor control system, vapor tight transport vessels, tank control with submerged fill/vapor control system/or floating roof, routine inspections</p> <p>Arizona: submerged fill and pressure/vacuum valve, vapor recovery system, tank floating roof seals, routine inspections, vapor-tight and leak-tight transport vessels, control delivery vessel purge emissions 90%</p> <p>RBLC: submerged fill, minimize spills, vapor recovery unit</p>

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of Most Recent EPA approval of Colorado Regulation 7	Summary of Colorado Regulation 7 requirements	Summary of CTG requirements	Summary of other requirements or regulations – for comparison
1977	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume III: Surface Coating of Metal Furniture					Coating VOC content limit 3.0 lb/gal	California: coating VOC content limits 2.3 to 5.8 lb/gal, may comply with control 85-95%, closed containers, minimize spills, specified application methods, cleaning solvent VOC content limit 0.42 lb/gal unless control 85%, clean spray equipment with non-organic solvent, stripper VOC content limit 1.7 lb/gal, substrate surface cleaning VOC content limit 0.21 lb/gal
2007	Control Techniques Guidelines for Metal Furniture Coatings	Regulation 7 Sections V. and IX. 40 CFR Part 60 Subpart EE 40 CFR Part 63 Subpart RRRR	12/14/1978 and 5/22/1980	8/5/2011 (76 FR 47443)	Cannot dispose of VOC by evaporation or spillage unless RACT utilized Fugitive VOC control – covers, closed containers, proper disposal Coating VOC content limit 3.0 lb/gal	Coating VOC content limit 2.3 to 3.5 lb/gal Optional add-on control device Application methods Cleaning material work practices – closed containers, minimize spills	Texas: coating VOC content limit 2.3 to 5.1 lb/gal, closed containers, minimize spills, specified application methods Arizona: coating VOC limit 3.0 lb/gal, specified application method, closed containers EPA Menu: CTG, reformulation or process modification (see SCAQMD), reduced solvent utilization, permanent total enclosure
1977	Control of Volatile Organic Emissions from Bulk Gasoline Plants	Regulation 7 Sections V., VI., and XV. 40 CFR Part 60 Subpart XX 40 CFR Part 63 Subparts R, BBBB	12/14/1978 and 4/9/1981	8/5/2011 (76 FR 47443)	Cannot dispose of VOC by evaporation or spillage unless RACT utilized Equip pumps and compressors with mechanical seals or other of equal efficiency, equip storage tanks with floating roof and vapor gathering system, routine tank inspections, submerged fill and vapor control system, load leak tight transport trucks and vapor collection system	Vapor collection systems, leak tight conditions, submerged fill	California: transfer vapor recovery system, vapor tight and liquid tight lines and connections, bottom fill, tank floating roof seals and covers, routine inspections, certified spill box, cargo tank vapor integrity testing, cannot purge gasoline from cargo tank to atmosphere, closed containers Texas: submerged fill, vapor control system, vapor tight transport vessels, tank control with submerged fill/vapor control system/or floating roof, routine inspections Arizona: submerged fill and pressure/vacuum valve, vapor recovery system, tank floating roof seals, routine inspections, vapor-tight and leak-tight transport vessels, control delivery vessel purge emissions 90% RBL: submerged fill, minimize spills, vapor recovery unit

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of Most Recent EPA approval of Colorado Regulation 7	Summary of Colorado Regulation 7 requirements	Summary of CTG requirements	Summary of other requirements or regulations – for comparison
1977 (ACT 1994)	Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed-Roof Tanks	Regulation 7 Sections V. and VI. 40 CFR Part 60 Subpart K, Kb 40 CFR Part 63 Subpart CC, EEEE, BBBB	12/14/1978	8/5/2011 (76 FR 47443)	Cannot dispose of VOC by evaporation or spillage unless RACT utilized Fixed roof seals and vapor gathering system, routine inspections	Equipment specifications, internal floating roof or equivalent, maintenance requirements, inspections (ACT expanded to chemical plants)	California: vapor loss control device, control tank degassing and cleaning emissions 90-95%, tank floating roof seals, routine inspections, bottom loading, maintain facility leak-free and vapor-tight, low emission fixed liquid level gauges and connectors Texas: maintain working pressure to prevent vapor or gas loss to atmosphere, control with submerged fill or vapor control system or floating roof, floating roof seal inspections Arizona: tanks with floating roof or vapor collection system, floating roof seals, routine inspections EPA Menu: seals (see SCAQMD) RBLC: submerged fill, aluminum or white color, vapor balancing, fuel specification, MACT CC, internal floating roof, RTO, good design, operating practices, enclosed combustor, stage I and II

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of Most Recent EPA approval of Colorado Regulation 7	Summary of Colorado Regulation 7 requirements	Summary of CTG requirements	Summary of other requirements or regulations – for comparison
1977	Control of Volatile Organic Emissions from Use of Cutback Asphalt	Regulation 7 Sections V. and XI.	12/14/1978	8/5/2011 (76 FR 47443)	<p>Cannot dispose of VOC by evaporation or spillage unless RACT utilized</p> <p>Sources subject to R7 use limitation Oct-Feb</p>	Substitute emulsions for cutback asphalt	<p>California: cutback asphalt < 0.5 % organic compounds that evaporate at < 500F; emulsified asphalt < 3% organic compounds that evaporate at < 500F; no rapid or medium-cure liquid asphalt; slow-cure liquid asphalt < 0.5% petroleum solvents that boil at < 500F (exemption when temp for 24 hour < 50F); no cutback asphalt in South Zone</p> <p>Texas: cutback asphalt limited to < 7% of total annual volume; no cutback asphalt April 16-Sept 15; asphalt emulsion VOC content 0.5 to 12% by weight; exemption for cutback asphalt as penetrating prime coat</p> <p>Arizona: no rapid cure cutback asphalt; cutback asphalt < 0.5% VOC that evaporates at < 500F; emulsified asphalt < 3% VOC that evaporates at < 500F; exemption for non-rapid cure cutback asphalt as a penetrating prime coat</p> <p>EPA Menu: reformulation, process modification</p>
1978	Control Techniques for Volatile Organic Emissions from Stationary Sources <i>EPA Note – This document is often listed with CTGs, but it does not define RACT for any particular source.</i>	NA – compilation of control techniques					
1978	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume VI: Surface Coating of Miscellaneous Metal Parts and Products	Regulation 7S Sections V. and IX. 40 CFR Part 63, Subpart M	12/14/1978 and 12/4/1980	8/5/2011 (76 FR 47443)	<p>Cannot dispose of VOC by evaporation or spillage unless RACT utilized</p> <p>Fugitive VOC control – covers, closed</p>	Coating VOC content limit 3.0 to 4.3 lb/gal; available control options: incineration, water-borne/high solids/powder coatings, carbon adsorption	<p>California: coatings VOC content 2.3-7.3 lb/gal, VOC content 60-680 g/l, cleaning solvent VOC content 0.21-0.23 lb/gal, may comply with 85-95% control, closed containers, application methods</p> <p>Texas: coatings VOC content 2.3-6.7 lb/gal,</p>

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of Most Recent EPA approval of Colorado Regulation 7	Summary of Colorado Regulation 7 requirements	Summary of CTG requirements	Summary of other requirements or regulations – for comparison
2008	Control Techniques for Miscellaneous Metal Parts Coatings				containers, proper disposal Coating VOC content limit 3.0 to 4.3 lb/gal	Coating VOC content limit 2.3 to 6.2 lb/gal; application methods; alternative use of add-on control; work practices (closed containers, minimize spills)	application methods, work practices Arizona: coating VOC content 3.0-3.5 lb/gal, alternative control device 90%, application methods, closed containers, spray gun cleaning practices RBLC: consumption limits, VOC content 3.5-7.25 lb/gal, HVLP, closed containers, carbon adsorption Menu: VOC content limits, add-on control, CTG
1978	Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment	Regulation 7 Sections V. and VIII. 40 CFR Part 60 Subparts GGG, GGGa, J, Ja 40 CFR Part 63 Subpart CC	12/14/1978	8/5/2011 (76 FR 47443)	One major source – see Table 6	Leak detection and repair	California: leak detection and repair (7 days), routine inspections; vent PRD to vapor recovery or disposal system, leak thresholds: equipment, connector, and valves > 100 ppm, pump, compressor, and PRD > 500 ppm, components, connections, flanges, pumps, compressors, PRD > 200 to 10,000 ppmv; repair 0 to 7 days; reinspect after repair; cap/seal open-ended lines and valves Texas: routine inspection, step up/down inspection frequency option, repair leaks, leak thresholds: pumps and compressors 2000 ppm and other components 500 ppm EPA Menu: process modification, flare gas recovery unit, flaring limits and operational practice (see SCAQMD) RBLC: quarterly leak detection and repair, MACT H, NESHAP V, MACT CC, NSPS GGGa, MACT FFFF

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of Most Recent EPA approval of Colorado Regulation 7	Summary of Colorado Regulation 7 requirements	Summary of CTG requirements	Summary of other requirements or regulations – for comparison
1978	Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products	Regulation 7 Sections V., IX., and XIV. 40 CFR Part 63, Subpart GGG	12/14/1978 and 9/20/1989 and 12/4/1980	8/5/2011 (76 FR 47443)	<p>Cannot dispose of VOC by evaporation or spillage unless RACT utilized</p> <p>Fugitive VOC control – covers, closed containers, proper disposal</p> <p>Control emissions from reactors, distillation operations, crystallizers, centrifuge and vacuum dryers with surface condensers or equivalent controls; vapor balance system for transfer from truck or railcar to storage tanks; enclose centrifuges, rotary vacuum filters, other filters; covers on in-process tanks; repair leaks; closed containers</p>	<p>Controls (e.g., condensers, scrubbers, carbon adsorbers, vapor return lines, conservation vents, pressure tanks) for dryers, reactors, distillation units, storage and transfer, filters, extractors, centrifuges, crystallizers; may be reasonable to regulate on plant by plant basis</p>	<p>California: control reactors, distillation columns, crystallizers, centrifuges with surface condensers or equivalent; enclose centrifuges and vacuum filters; tank covers; operational requirements; closed containers</p> <p>Texas: control reactors, distillation units, crystallizers, centrifuges, vacuum dryers with condenser; cover in-process tanks; control air dryers, production equipment exhaust system, loading facilities 90%</p> <p>Arizona: control reactor, distillation column, crystallizer, centrifuge with surface condenser or equivalent; cover in-process tanks; control vacuum filter, other filter, and separation device 90%; control chemical sterilizer 75%; control air dryer 90%; repair leaks; closed containers</p> <p>EPA Menu: equipment and operational requirements (see SCAQMD)</p> <p>RBLC: scrubbers, incinerator, carbon adsorption, RTO, LDAR</p>

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of Most Recent EPA approval of Colorado Regulation 7	Summary of Colorado Regulation 7 requirements	Summary of CTG requirements	Summary of other requirements or regulations – for comparison
1978 (ACT 1994)	Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks	Regulation 7 Sections V. and VI. 40 CFR Part 60 Subpart K, Kb	12/14/1978	8/5/2011 (76 FR 47443)	Cannot dispose of VOC by evaporation or spillage unless RACT utilized Floating roof seals, covered roof drains, covered/sealed openings, routine inspections	Equipment specifications, seals, maintenance requirements, inspections	California: vapor loss control device, control tank degassing and cleaning emissions 90-95%, tank floating roof seals, routine inspections, bottom loading, maintain facility leak-free and vapor-tight, low emission fixed liquid level gauges and connectors Texas: maintain working pressure to prevent vapor or gas loss to atmosphere, control with submerged fill or vapor control system or floating roof, floating roof seal inspections Arizona: tanks with floating roof or vapor collection system, floating roof seals, routine inspections EPA Menu: seals (see SCAQMD) RBLC: submerged fill, aluminum or white color, vapor recovery, seals, drain dry design bottoms, NSPS Kb, MACT BBBBB, limited roof landings, good engineering practices, LDAR, dome, MACT CC
1978	Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems	Regulation 7 Sections V., VI., and XV. 40 CFR Part 60 Subpart XX 40 CFR Part 63 Subparts R, BBBBBB	12/14/1978 and 4/9/1981	8/5/2011 (76 FR 47443)	Cannot dispose of VOC by evaporation or spillage unless RACT utilized Annual leak-tight test, semi-annual visual inspections	Leak tight conditions, vapor collection systems	California: vapor integrity test, cannot purge gasoline vapor from cargo tank to atmosphere, vapor and liquid leak free connectors Texas: annual leak-tight test Arizona: vapor tight and leak free vessels, annual leak test, vapor return hoses, collect and contain spills, cannot purge vapors from delivery vessel unless control 90% RBLC: vapor tight vessels, submerged fill, RTO, vapor combustor

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of Most Recent EPA approval of Colorado Regulation 7	Summary of Colorado Regulation 7 requirements	Summary of CTG requirements	Summary of other requirements or regulations – for comparison
1983	Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants	Regulation 7 Sections V. and XII. 40 CFR Part 60 Subpart KKK, OOOO, OOOOa (proposed)	12/14/1978 and 3/12/2004	8/5/2011 (76 FR 47443)	Cannot dispose of VOC by evaporation or spillage unless RACT utilized NSPS level fugitive emission LDAR	Leak detection and repair	California: leak detection and repair EPA Menu: natural gas production compressors SCR RBLC: thermal oxidizers, flare, diesel engine operation limits, LNB, ULNB, FGR, bottom filling tanks, aluminum or white tanks, fugitive LDAR, heater burner control, good combustion practices, floating roof tanks, enclosed oil-water separator, NSPS OOOO, dehy vapor recovery unit, enclosed combustor
2015 (proposed)*	Control Techniques Guidelines for the Oil and Natural Gas Industry	Regulation 7 Sections V., XII., XVII., and XVIII. 40 CFR Part 60 Subparts OOOO, OOOOa (proposed)	12/14/1978 and 3/12/2004 and 12/17/2006 and 12/12/2008	Section V. – 8/5/2011 (76 FR 47443) Section XII. – 2/3/2008 (73 FR 8194)	Cannot dispose of VOC by evaporation or spillage unless RACT utilized 90% system wide tank controls, 95% individual tank control, no tank venting, 95% centrifugal compressor control, rod packing replacement reciprocating compressors, low or no bleed pneumatic controllers, leak detection and repair at well sites/compressor stations/gas plants, liquids unloading BMPs, route gas to sales line or control	PROPOSED: 95% tank control, well completion requirements, 95% centrifugal compressor control, rod packing replacement reciprocating compressors, low or no bleed pneumatic controllers, zero emission pneumatic pumps, leak detection and repair at well sites/compressor stations/gas plants	California: concentration of TOC in well cellar < 500 ppmv, cannot store organic liquid in well cellar, control gas 95%, repair gaseous leaks > 250 ppmv, routine inspections, odor event cause analysis and report, repair component leaks > 10,000 ppmv, closed access hatches, control emissions from glycol dehy 95%, vapor recovery system on crude oil storage tanks, control crude oil storage tank degassing emissions 95%, power drilling operations with grid power EPA Menu: reduce fugitive emissions (see SCAQMD)

Appendix 6-C(a) – CTGs Colorado Could Consider Adopting – Aerospace

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of EPA approval of Colorado Regulation 7	Colorado requirements	CTG recommendations	Other requirements or regulations – for comparison												
1994 (1997)	Aerospace (CTG & NESHAP) <i>EPA Note – See also 59 FR-29216, June 6, 1994.</i>	Regulation 7 Sections V. and IX. 40 CFR Part 63 Subpart GG	12/14/1978 and 12/4/1980	8/5/2011 (76 FR 47443)	Cannot dispose of VOC by evaporation or spillage unless RACT utilized Fugitive VOC control – covers, closed containers, proper disposal Coating VOC limit 3.5 lb/gal	Specialty coating VOC content limits 60-1230 g/l (exempt if use < 50 gal/yr), cleaning solvent subject to work practices (closed containers), control VOC emissions through product substitution (e.g., waterborne and high solids materials) and equipment changes (e.g., high transfer efficiency spray guns, spray gun cleaners, and conventional high transfer efficiency methods) Manufactured metal parts CTG coating VOC content limits 1.7 to 5.8 lb/gal	California: coatings VOC content limits 120 to 1000 g/l, coating VOC content limits 1.3 to 8.3 lb/gal, maskant VOC content limit < 600 g/l, may control 85%, strippers VOC content limit < 2.5 lb/gal, surface preparation VOC content limit < 1.67 lb/gal, cleaning solvent VOC limit 0.21 to 1.67 lb/gal, cleaning solvent w/o VOC or control 95%, coatings ROC content limit 0.4 to 8.3 lb/gal, cleaning solvent ROC content limit < 200 g/l, stripper ROC content limit < 300 g/l, specified application methods, closed containers Texas: coatings VOC content limits 60 to 1230 g/l, specified application methods, specified spray gun cleaning practice Arizona: coatings VOC content limits 60 to 1030 g/l, may comply with control 81%, specified application methods or 65% transfer efficiency, cleaning solvent VOC composite vapor pressure < 45 mm Hg, closed containers EPA Menu: CTG RBLC: MACT GG, low pressure or hand application, good work practices, low VOC coatings and solvents												
	<table border="1"> <thead> <tr> <th data-bbox="275 1081 522 1159">Facility</th> <th data-bbox="527 1081 678 1159">Permitted VOC emissions, tpy</th> <th data-bbox="682 1081 833 1159">Estimated actual VOC emissions, tpy</th> <th data-bbox="837 1081 989 1159">Requirements</th> </tr> </thead> <tbody> <tr> <td data-bbox="275 1162 522 1214">Lockheed Martin Space Systems (059-0099)</td> <td data-bbox="527 1162 678 1214">60</td> <td data-bbox="682 1162 833 1214">2.51</td> <td data-bbox="837 1162 989 1214">Coating VOC content limits (3.5 lb/gal), HVLP, fugitive VOC emission control, cleaning/degreasing control</td> </tr> <tr> <td data-bbox="275 1218 522 1263">Ball Aerospace (013-0084 & 059-0083)</td> <td data-bbox="527 1218 678 1263">50 & 25</td> <td data-bbox="682 1218 833 1263">7.99 & 10.51</td> <td data-bbox="837 1218 989 1263">Coating VOC content limits (3.0-4.3 lb/gal), HVLP, fugitive VOC emission control, NESHAP HHHHHH, , cleaning/degreasing control</td> </tr> </tbody> </table>	Facility	Permitted VOC emissions, tpy	Estimated actual VOC emissions, tpy	Requirements	Lockheed Martin Space Systems (059-0099)	60	2.51	Coating VOC content limits (3.5 lb/gal), HVLP, fugitive VOC emission control, cleaning/degreasing control	Ball Aerospace (013-0084 & 059-0083)	50 & 25	7.99 & 10.51	Coating VOC content limits (3.0-4.3 lb/gal), HVLP, fugitive VOC emission control, NESHAP HHHHHH, , cleaning/degreasing control						
Facility	Permitted VOC emissions, tpy	Estimated actual VOC emissions, tpy	Requirements																
Lockheed Martin Space Systems (059-0099)	60	2.51	Coating VOC content limits (3.5 lb/gal), HVLP, fugitive VOC emission control, cleaning/degreasing control																
Ball Aerospace (013-0084 & 059-0083)	50 & 25	7.99 & 10.51	Coating VOC content limits (3.0-4.3 lb/gal), HVLP, fugitive VOC emission control, NESHAP HHHHHH, , cleaning/degreasing control																

Appendix 6-C(b) – CTGs Colorado Could Consider Adopting – Wood Furniture Manufacturing Operations

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of EPA approval of Colorado Regulation 7	Colorado requirements	CTG recommendations	Other requirements or regulations – for comparison
1996	Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations <i>EPA Note – Wood Furniture (CTG-MACT) – Draft MACT out 5-1994; Final CTG issued 4-1996. See also 61 FR-25223, May 20, 1996 and 61 FR-50823, September 27, 1996.</i>	Regulation 7 Sections V. and IX. 40 CFR Part 63 Subpart JJ	12/14/1978 and 9/20/1989	8/5/2011 (76 FR 47443)	Cannot dispose of VOC by evaporation or spillage unless RACT utilized Fugitive VOC control – covers, closed containers, proper disposal	Combustion or recovery device, low VOC coatings (0.8-2.3 kg VOC/kg solids), pollution prevention, work practices (e.g., closed containers)	California: coatings VOC content limits 0.25 to 6.3 lb/gal, coatings ROC content 2.0 to 6.3 lb/gal, stripper VOC content < 250 g/l, may comply with control 85-90%, specified application methods, closed containers, cleaning solvent VOC content 0.21 lb/gal Texas: coatings VOC content limits 0.8 to 2.3 kg VOC/kg solids or vapor control system equivalent reduction, cleaning solvent VOC content < 8% VOC, prohibits conventional spray gun Arizona: coatings VOC content 1.8 to 2.3 lb VOC/lb solids, specified application methods, cleaning solvent VOC content < 8% VOC, closed containers EPA menu: CTG RBLC: coating reformulation, proper spraying techniques, paint filter
	Facility	Permitted VOC emissions, tpy	Estimated actual VOC emissions, tpy	Requirements			
	Elkay Wood Products (001-1602)	249	131	See major source Table 6			

Appendix 6-C(c) – CTGs Colorado Could Consider Adopting – Offset Lithographic Printing and Letterpress Printing

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of EPA approval of Colorado Regulation 7	Colorado requirements	CTG recommendations	Other requirements or regulations – for comparison
2006 (ACT 1993, 1994)	Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing	Regulation 7 Section V.	12/14/1978	8/5/2011 (76 FR 47443)	Cannot dispose of VOC by evaporation or spillage unless RACT utilized	Reduce emissions from fountain solution by limiting alcohol to < 5%, cleaning materials with VOC composite vapor pressure < 10 mm Hg or < 70% VOC (excluding 110 gal noncompliant cleaning materials), work practices (closed containers), reduce emissions from heatset dryers ≥ 25 tpy VOC with control devices 90-95% (no recommended control from sheet-fed or coldset web)	<p>California: Ink VOC content limits 1.25 to 2.5 lb/gal, fountain solution limit 1.6 to 8% VOC, cleaning product VOC limit 0.21 to 0.83 lb/gal, may comply with control 75%, closed containers, specified application methods</p> <p>Texas: low solvent ink < 25% VOC or high solids solvent ink > 60% nonvolatile material or vapor control system 90% reduction, fountain solution alcohol content < 5% by volume alcohol (heatset) or < 10% (sheet-fed) or no alcohol (non-heatset printing newspapers), cleaning solvent VOC content < 50% by volume VOC, closed containers</p> <p>EPA Menu: CTG</p> <p>RBLC: fountain solution VOC content, work practices, thermal oxidizer, water based material VOC content, equipment design</p>
	Facility	Permitted VOC emissions, tpy	Estimated actual VOC emissions, tpy	Requirements			
	Frederic Printing (001-0262)	77.2	20.07	Non-heatset-sheetfed-offset printing, low VOC inks, fugitive emission control			
	Ross Printing (001-0631)	13.5	5.37	Sheetfed-offset printing, heatset printer with thermal oxidizer, fugitive emission control			
	Mido Printing (001-0940)	10.41	3.08	Non-heatset-sheetfed printing, low VOC inks, fugitive emission control			
	Fuse Inc (001-1967)	5	3.96	Non-heatset-sheetfed printing, biorenewable vegetable and aqueous based inks, fugitive emission control			
	Siler Printing (001-1979)	5	3.96	Non-heatset-sheetfed printing, fugitive emission control			
	Cottrell Printing (005-1114)	4.9	4.779	Non-heatset-sheetfed printing, fugitive emission control			
	D&K Printing (013-0496)	12	4.21	Non-heatset-sheetfed printing, soy-based inks, water miscible/low odor/low VOC cleanup solvent, fugitive emission control			
	Publication Printers (031-0234)	24	13.02	Heatset web, sheetfed offset, non-heatset web printing, low VOC inks, fugitive emission control, afterburner			
	Lange Graphics (031-1271)	22	10.6	Non-heatset-sheetfed printing, low VOC ink, 90% UV inks, fugitive emission control			
	American Web (031-1363)	21	10.67	Heatset web offset printing, low VOC inks, fugitive emission control, catalytic converter			
	Adams McClure (031-1781)	15	10	Non-heatset-sheetfed and heatset web and heatset offset printing, low VOC inks, fugitive emission control			

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of EPA approval of Colorado Regulation 7	Colorado requirements	CTG recommendations	Other requirements or regulations – for comparison
	Sprint Denver (031-1800)	12.5	8.73		Non-heatset-sheetfed printing, fugitive emission control		
	Colorado Plasticard (059-0439)	35	18.7		Non-heatset-sheetfed printing, water based inks, fugitive emission control		
	Citizen Printing (069-0244)	6.32	3.08		Non-heatset-sheetfed printing, low VOC ink, fountain solution < 5%, fugitive emission control		

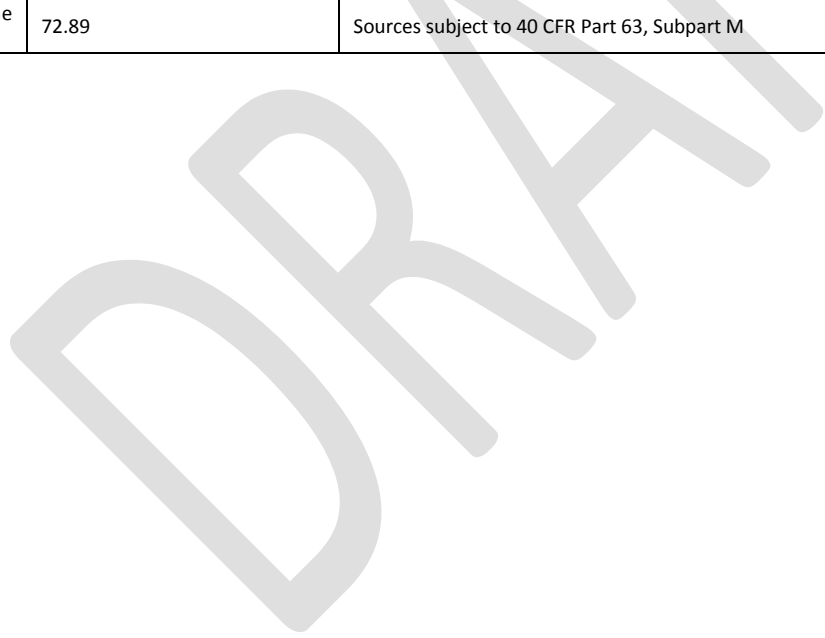
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Appendix 6-C(d) – CTGs Colorado Could Consider Adopting – Industrial Cleaning Solvents

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of EPA approval of Colorado Regulation 7	Colorado requirements	CTG recommendations	Other requirements or regulations – for comparison
2006 (ACT 1994)	Control Techniques Guidelines for Industrial Cleaning Solvents	Regulation 7 Section V.	12/14/1978	8/5/2011 (76 FR 47443)	Cannot dispose of VOC by evaporation or spillage unless RACT utilized	Work practice standards, cleaning materials VOC content limit 0.42 lb/gal, optional alternative limit on composite vapor pressure of cleaning materials, add-on controls emission reduction 85%	<p>California: cleaning solvent VOC content limit 0.21 to 6.7 lb/gal, may comply with control 85-95%, consumer paint thinner VOC content limit 0.21 lb/gal, specified cleaning methods, closed containers</p> <p>Texas: solvent VOC content < 0.42 lb/gal or vapor control system 85% reduction, closed containers, minimize emissions</p> <p>Arizona: solvent VOC content < 0.42 lb/gal, work practices if not using low-VOC solvent (i.e., 0.42 lb/gal), closed containers</p> <p>EPA Menu: CTG</p> <p>RBLC: vapor condensing/recovery system, operating time limit</p>
	Facility	Permitted VOC emissions, tpy	Estimated actual VOC emissions, tpy	Requirements			
	Unknown			VOC disposal requirements, industry practices			

Appendix 6-C(e) – CTGs Colorado Could Consider Adopting – Perchloroethylene Dry Cleaning Systems

Date of CTG	Description	Colorado and federal rules	Date of Colorado adoption	Date of EPA approval of Colorado Regulation 7	Colorado requirements	CTG recommendations	Other requirements or regulations – for comparison
1978	Control of Volatile Organic Emissions from Perchloroethylene Dry Cleaning Systems <i>EPA Note – Perchloroethylene has been exempted as a VOC, so this CTG is no longer relevant. However, there is a NESHAP for perchloroethylene dry cleaners.</i>	Regulation 7 Section V. 40 CFR Part 63 Subpart M	12/14/1978	8/5/2011 (76 FR 47443)	Cannot dispose of VOC by evaporation or spillage unless RACT utilized	Carbon adsorbers, cookers and cartridge filters, waste disposal, leak detection	California: prohibits the installation of new perchloroethylene dry cleaning systems
	Facility	Estimated actual perchloroethylene emissions, tpy		Requirements			
	108 in ozone nonattainment area	72.89		Sources subject to 40 CFR Part 63, Subpart M			



Appendix 6-D – ACT VOC source category

Date of ACT	Description	Other rules	Summary conclusion
1983	Control Techniques for Organic Emissions from Plywood Veneer Dryers	40 CFR Part 63 Subpart DDDD	No further action at this time – see MACT
1988	Reduction of Volatile Organic Compound Emissions from the Application of Traffic Markings	National Volatile Organic Compound Emission Standards for Architectural Coatings	No further action at this time – see consumer products rule
1989	Alternative Control Technology Document – Ethylene Oxide Sterilization/Fumigation Operations	40 CFR Part 63 Subparts O, XX, WWWW	No further action at this time – see MACT
1989	Alternative Control Technology Document – Halogenated Solvent Cleaners	40 CFR Part 63 Subpart T	No further action at this time – see MACT
1990	Alternative Control Technology Document – Organic Waste Process Vents		No action at this time – not a CTG VOC source category
1990	Control of VOC Emissions from Polystyrene Foam Manufacturing	40 CFR Part 63 Subpart III, MMMM, OOOOO	No further action at this time – see MACT
1992	Alternative Control Technology Document – Bakery Ovens		No action at this time – not a CTG VOC source category
1992	Control Techniques for Volatile Organic Compound Emissions from Stationary Sources	NA – compilation of control techniques	
1992 (1994)	Industrial Wastewater Alternative Control Technology		No action at this time – not a CTG VOC source category
1993	Control of VOC Emissions from the Application of Agricultural Pesticides		No further action at this time – APCD does not regulate agriculture
1994	Alternative Control Techniques Document – Volatile Organic Liquid Storage in Floating and Fixed Roof Tanks	40 CFR Part 60 Subparts K, Kb	No further action at this time – see CTG, NSPS
1994	Control of Volatile Organic Compound Emissions from Batch Processes		No action at this time – not a CTG VOC source category
1994	Alternative Control Techniques Document – Industrial Cleaning Solvents		No further action at this time – see CTG
1994	Alternative Control Techniques Document – Surface Coating of Automotive/Transportation and Business Machine Plastic Parts	40 CFR Part 60 Subpart TTTT, 40 CFR Part 63 Subpart PPPP	No further action at this time – see CTG, NSPS, MACT
1988 (1994)	Alternative Control Techniques Document – Automobile Refinishing	National Volatile Organic Compound Emission Standards for Automobile Refinish Coatings	No further action at this time – see consumer products rule
1994	Alternative Control Techniques Document – Surface Coating Operations at Shipbuilding and Ship Repair Facilities	40 CFR Part 63 Subpart II	No further action at this time – see CTG, MACT
1993 (1994)	Control of Volatile Organic Compound Emissions from Offset Lithographic Printing		No further action at this time – see CTG

Appendix 6-E – ACT NOx Source Category

Date of ACT	Description	Other rules	Summary conclusion
1991	NOx Emissions from Nitric and Adipic Acid Manufacturing Plants	40 CFR Part 60 Subparts G, Ga	No further action at this time – see NSPS, MACT
1993	NOx Emissions from Stationary Combustion Turbines	R6.II (SO2) & 40 CFR Part 60 Subparts GG, KKKK, 40 CFR Part 63 Subpart YYYY	No further action at this time – see NSPS, MACT
1993	NOx Emissions from Process Heaters		No further action at this time – source by source RACT permitting analysis
1993 (2000)	NOx Emissions from Stationary Internal Combustion Engines	R7.XVI, XVII & 40 CFR Part 60 Subparts IIII, JJJJ	No further action at this time – see NSPS, MACT
1994 (2000)	NOx Emissions from Cement Manufacturing	R6.III (SO2) & 40 CFR Part 60 Subpart F, 40 CFR Part 63 Subpart LLL	No further action at this time – see NSPS, MACT
1994	NOx Emissions from Industrial, Commercial & Institutional Boilers	R6.II. (SO2), VIII (Hg) & 40 CFR Part 63 Subparts DDDDD, JJJJJ	No further action at this time – see NSPS, MACT
1994	Alternative Control Techniques – NOx Emissions from Utility Boilers	R6.II.D (SO2), VIII (Hg) & 40 CFR Part 60 Subparts D, Da, Db, Dc, 40 CFR Part 63 Subpart UUUUU	No further action at this time – see NSPS, MACT
1994	Alternative Control Techniques – NOx Emissions from Glass Manufacturing	R6.III (SO2) & 40 CFR Part 60 Subpart CC, 40 CFR Part 63 Subpart SSSSS	No further action at this time – see NSPS, MACT
1994	Alternative Control Techniques – NOx Emissions from Iron and Steel Mills	R6.III (SO2) & 40 CFR Part 60 Subpart AA, AAa, Na, 40 CFR Part 63 Subparts CCC, EEEEE, FFFFF, ZZZZ	No further action at this time – see NSPS, MACT

Appendix 6-F – Major Sources of VOC and/or NOx Emissions in Colorado Ozone Nonattainment Area

Pollutant	Facility	AIRS ID	Facility purpose	Estimated emissions, uncon (tpy)	Estimated emissions, actual (tpy)	Major VOC or NOx emission points	Requirements	Summary conclusion
SIC: Petroleum Refining, Petroleum Bulk Stations/Terminals, Wood Kitchen Cabinets, Refuse Systems, Malt Beverages, Metal Cans, Photographic Equipment/Supplies, Soil Prep. Services								
VOC	SUNCOR ENERGY - DENVER REFINERY	001-0003	Petroleum refining	4840.14	421.59	Tanks, cold cleaners, wastewater treatment, rail and truck loading, equipment leaks	Tanks – MACT CC, NSPS Kb, R7.III, R7.VI, R7.IV, NSPS UU, MACT R; cold cleaners – R7.X; cooling towers – MACT CC; catalytic reforming – MACT UUU; wastewater treatment – MACT CC, NESHAP FF, NSPS Kb, NSPS QQQ; rail car loading – R7.VI; truck loading – NSPS XX, MACT GGGGG, MACT R, R7.VI, groundwater treatment – R7.V; leaks – MACT CC, NSPS GGG, R7.VIII	No further action at this time
NOx	SUNCOR ENERGY - DENVER REFINERY	001-0003	Petroleum refining	576.932	526.92	Engines, heaters	Engines – MACT ZZZZ, NSPS IIII, NSPS JJJJ; process heater – MACT DDDDD, NSPS J, NSPS Ja; sulfur recovery unit – NSPS J, MACT UUU; fluid catalytic cracking unit – NSPS J, MACT UUU	Analyzing potential additional NOx controls
VOC	PHILLIPS 66 PIPELINE - DENVER TERMINAL	001-0015	Petroleum marketing and storage terminal	1905.61	127.27	Tanks, loading rack, tank cleaning, equipment leaks	Tanks – VCU, NSPS XX, NSPS K, NSPS Kb, MACT BBBBBB, internal floating roof	No further action at this time
VOC	SINCLAIR DENVER PRODUCTS TERMINAL	001-0019	Petroleum products terminal	107.9	96.5	Tanks, truck and rail loading, fugitive emissions	Tanks – VCU (2), NSPS K, NSPS Ka, NSPS Kb, MACT BBBBBB, R7.III; truck loading – VCU, MACT BBBBBB; fugitive VOC – MACT BBBBBB	No further action at this time
VOC	ELKAY WOOD PRODUCTS COMPANY	001-1602	Manufactures wood cabinets using various woodworking equipment	166.9	166.9	Spray booths, wood working, coatings	Spray booths – PM filters; wood working areas – baghouse; coatings – MACT JJ VHAP limits; HVLP; fugitive VOC emission control	Analyzing potential additional VOC controls
VOC	WASTE MANAGEMENT OF COLORADO DENVER ARAP DI	005-1291	Municipal solid waste disposal facility	4795.99	59.83	Landfill gas	Landfill gas – flare, NSPS Cc	No further action at this time
VOC	MILLERCOORS, LLC - GOLDEN BREWERY	059-0006	Produces malt beverages	1221.9	481.026	Grain handling, fermenting/brewing, bottling, wastewater	Fermenting – VOC duct (boilers); wastewater treatment plant – submerged fill; bottle label glue – pollution prevention, low VOC glue; tanks – no detectable vapor loss, fugitive emissions – R7.IX.A.7	Analyzing potential additional VOC controls
VOC	BALL METAL BEVERAGE CONTAINER CORP	059-0010	Produces aluminum cans and ends	294.002	126.955	Boilers, cold solvent parts washers, coating systems, ovens, conversion presses, end compound liners, storage	Cold cleaners – R7.X.; coating systems – RTO, NSPS WW, R7.IX.C.; printing lines – RTO; storage tanks – R7.III.	Analyzing potential additional VOC controls

Pollutant	Facility	AIRS ID	Facility purpose	Estimated emissions, uncon (tpy)	Estimated emissions, actual (tpy)	Major VOC or NOx emission points	Requirements	Summary conclusion
						tanks		
VOC	ANHEUSER-BUSCH, LLC	069-0060	Produces malt beverages	271.214	271.214	Brewing, bottle/can line, wastewater, ethanol loadout	Brewing – efficient process operation; packaging – pollution prevention; alcohol distillation – ethanol recovery, submerged fill	Analyzing potential additional VOC and NOx controls
VOC	EASTMAN KODAK CO	123-0003	Manufacture photographic supplies	2146.97	45	Chemical manufacturing, thermal medical manufacturing	Thermal media coating lines – RTO, MACT KK	No further action at this time
NOx	EASTMAN KODAK CO	123-0003	Manufacture photographic supplies	223	1.8	Boilers	Boilers – gas consumption limit	No further action at this time
VOC	METAL CONTAINER CORP	123-0134	Manufactures the bodies of 2 piece-aluminum beverage cans	245.31	245.31	Can coating, cleaning solvents	Can coating – NSPS WW, R7.IX.C.; fugitive emissions – R7.IX.A.7.; cleaning solvents – R7.X.	Analyzing potential additional VOC controls
VOC	NUTRI-TURF INC	123-0497	Land application of brewery wastewater	4240	106	Land application	Land application – evaporation, vegetative destruction	No further action at this time
VOC	STROMO, LLC - HUDSON COMPOSTING FACILITY	123-9AF1	Composting	256.3	256.3	Composting	Composting – best management practices (cover)	No further action at this time
VOC	A1 ORGANICS - RATTLER RIDGE ORG RECYCLING	123-9AEF	Composting	231.3	231.3	Composting	Composting – best management practices (cover)	No further action at this time
SIC: Electric Services, Cement, Glass Containers, Construction Sand and Gravel, Steam and Air-Conditioning Supply, Photographic Equipment and Supplies								
NOx	PUBLIC SERVICE CO CHEROKEE PLT ³	001-0001	Electric generating facility	5338.34	5338.34	2 coal fired boilers, 3 emergency diesel generators	Boilers – LNB-OFA then shutdown or conversion to gas; 1 generator – NSPS IIII, MACT ZZZZ	No further action at this time
NOx	PUBLIC SERVICE CO - VALMONT ³	013-0001	Electric generating facility	4088.24	2068.93	Coal fired boiler, gas fired boiler, gas fired turbine, oil fired turbine, emergency diesel generator	Coal boiler – low NOx burner and over-fire air then shutdown; gas boiler – low NOx burners, MACT DDDDD; generator – MACT ZZZZ	No further action at this time
NOx	CEMEX CONSTRUCTION MATERIALS - LYONS ³	013-0003	Manufacturers Portland cement	1050.82	1050.82	Raw material dryer, kiln	Dryer – operation as designed, MACT LLL; kiln – fuel consumption, MACT LLL	No further action at this time

Pollutant	Facility	AIRS ID	Facility purpose	Estimated emissions, uncon (tpy)	Estimated emissions, actual (tpy)	Major VOC or NOx emission points	Requirements	Summary conclusion
NOx	UNIV OF COLO BOULDER - POWER HOUSE	013-0553	Electricity and steam generation	158.52	95.62	2 gas/oil fired turbines, 2 standby gas/oil backup boilers	Turbines – fuel consumption, NSPS GG, steam injection	No further action at this time
NOx	PUBLIC SERVICE CO DENVER STEAM PLT	031-0041	Industrial steam boilers	181.87	181.87	2 primarily gas fired steam boilers	Boilers – fuel consumption	No further action at this time
NOx	ROCKY MOUNTAIN BOTTLE CO	059-0008	Produces container glass	351.75	351.75	3 glass melt furnaces	Furnaces – glass production limit	Analyzing potential additional NOx controls
NOx	TEXAS IND (TXI) OPERATIONS DBA WESTERN A	059-0409	Shale quarry	117.65	117.65	Rotary kiln, diesel emergency generator	Kiln – fuel usage, NSPS UUU; generator – MACT ZZZZ	Analyzing potential additional NOx controls
NOx	COLORADO-GOLDEN ENERGY CORPORATION ¹⁸	059-0820	Electricity and steam generation	636.525	636.525	2 gas/oil fired boilers, coal fired boiler, 2 coal/gas/ethane fired boilers	Coal boiler – baghouse; coal/ethanol boilers – baghouse	Analyzing potential additional NOx controls
NOx	PLAINS END, LLC	059-0864	Electric generating facility	140.991	26.287	34 gas fired internal combustion engines, emergency engines	Engines – SCR, MACT ZZZZ or NSPS JJJ; emergency engine – MACT ZZZZ or NSPS IIII	No further action at this time
NOx	COLORADO STATE UNIV CSU FACILITY SVCS	069-0011	Electricity and steam generation	123.379	123.379	3 gas/oil fired boilers, steam turbine, 2 gas fired boilers, emergency generators	Boilers – fuel consumption; gas boilers – fuel consumption, NSPS Dc; generators – NSPS IIII or NSPS JJJJ	Analyzing potential additional NOx controls
NOx	PLATTE RIVER POWER AUTHORITY - RAWHIDE ³	069-0053	Electric generating facility	4717.88	1419.87	Coal boiler, 5 gas fired simple cycle combustion turbines	Boiler - LNC3 low-NOx combustion control system with separated over-fire-air and a low NOx concentric firing burner; turbines – dry low NOx combustion systems	No further action at this time
NOx	PUBLIC SERVICE CO FORT SAINT VRAIN PLT	123-0023	Electric generating facility	1237.94	391.34	5 gas combustion turbines, heat recovery steam generators, auxiliary boiler, emergency diesel generators	Turbines – dry low NOx burners; heat recovery generators – SCR; boiler – gas consumption limit; generator – MACT ZZZZ	No further action at this time
NOx	THERMO POWER & ELEC INC	123-0126	Cogeneration of electricity and steam	350	70	5 combustion turbines, 2 emergency diesel engines	Turbines – steam injection, 1-3 retired; engines – MACT ZZZZ	Analyzing potential additional NOx controls
NOx	THERMO COGEN PARTNERSHIP - JM	123-0250	Cogeneration of	281.9723	281.9723	5 combustion turbines, 2 emergency diesel	Turbines – steam injection; engines – MACT ZZZZ	Analyzing potential

¹⁸ Subject to Regional Haze BART or Reasonable Progress determination, approved by EPA December 31, 2012 (77 Fed. Reg. 76871).

Pollutant	Facility	AIRS ID	Facility purpose	Estimated emissions, uncon (tpy)	Estimated emissions, actual (tpy)	Major VOC or NOx emission points	Requirements	Summary conclusion
	SHAFER		electricity and steam			engines		additional NOx controls
NOx	OWENS-BROCKWAY GLASS - TUMBLEWEED	123-4406	Glass container manufacturing facility	231.8662	231.8662	2 glass melting furnaces, diesel engine	Furnaces – glass production and NOx limit; engine – NSPS IIII	Analyzing potential additional NOx controls
NOx	SPINDLE HILL ENERGY, LLC	123-5468	Peaking utility electric power generation facility	118.69	118.69	2 combustion turbines, gas heater, diesel engine	Turbines – dry low NOx combustion system and water injection, NSPS KKKK; gas heater – NSPS Dc; diesel engine – MACT ZZZZ, NSPS IIII	No further action at this time
NOx	CARESTREAM HEALTH, INC	123-6350	Photographic supplies manufacturer	133	133	Boilers	Boilers fuel consumption limit	Analyzing potential additional NOx controls
SIC: Natural Gas Transmission, Crude Petroleum and Natural Gas, Natural Gas Liquids								
NOx	COLORADO INTERSTATE GAS CO - LATIGO C.S.	005-0055	Compressor station	174.87	174.87	5 gas fired engines, dehydration unit, process heater	Engines – fuel consumption, 4-R7.XVII.E.3. cost analysis, MACT ZZZZ; process heater – MACT DDDDD; fugitive emissions LDAR	Analyzing potential additional NOx controls
NOx	COLORADO INTERSTATE GAS CO WATKINS C.S.	001-0036	Compressor station	398.5	398.5	11 gas fired engines, process heaters	Engines – 6-R7.XVII.E.3. cost analysis; process heater – MACT DDDDD; fugitive emissions LDAR	Analyzing potential additional NOx controls
VOC	DCP MIDSTREAM LP - ENTERPRISE C.S.	123-0277	Compressor station	115.83	115.83	6 gas fired engines, 2 TEG dehydration units, 8 condensate storage tanks	Engines – oxidation catalyst, NSPS JJJJ, MACT ZZZZ; dehy – flare; tanks – enclosed combustor; fugitive emissions LDAR	No further action at this time
VOC	DCP MIDSTREAM, LP - GREELEY GAS PLANT	123-0099	Natural gas processing plant	295.21	83.55	Gas processing skid, storage tanks, TEG dehydration unit, EG dehydration unit, 8 engines, oil heaters	Skid and fractionation towers – NSPS KKK; tank and liquid loadout – VRU; engines – NSCR, fugitive emissions LDAR	No further action at this time
NOx		123-0099		251.98	185.398			No further action at this time
VOC	DCP MIDSTREAM, LP - MARLA C.S.	123-0243	Compressor station	500.51	88.7129	6 gas fired engines, 2 TEG dehydration units, fugitive VOC leaks	Engines – NSCR; dehy units – condenser and flare, fugitive emissions LDAR	No further action at this time
NOx		123-0243		178.81	178.81			No further action at this time
VOC	DCP MIDSTREAM, LP - PLATTEVILLE GPP	123-0595	Natural gas processing plant	181.49	152.136	Gas processing skid, EG dehydration unit, 3 storage tanks, 9 engines, hot oil heater, fugitive VOC	Engines – NSCR, MACT ZZZZ, NSPS JJJJ; hot oil heater – gas consumption; dehy – vented back into process; fugitive emissions LDAR	No further action at this time
NOx		123-0595		565.15	233.773			No further action at this time
VOC	DCP MIDSTREAM, LP - ROGGEN NGPP	123-0049	Natural gas processing	2511.35	191.258	12 engines, 2 heaters, 3 cryogenic plant skids,	Engines – air/fuel ratio controller, catalyst; propane truck blowdown – flare; depropanizer	No further action at this time

Pollutant	Facility	AIRS ID	Facility purpose	Estimated emissions, uncon (tpy)	Estimated emissions, actual (tpy)	Major VOC or NOx emission points	Requirements	Summary conclusion
NOx		123-0049	plant	959.694	205.09	fractionator plant, condensate loadout, storage tanks	heater – fuel consumption; fugitive emissions LDAR	No further action at this time
VOC	DCP MIDSTREAM, LP - SPINDLE GAS PLANT	123-0015	Natural gas processing plant	361.758	134.397	12 engines, TEG dehydration unit, fugitive emissions, gas processing skid, hot oil heater, condensate loadout rack, 4 storage tanks	Fugitive emissions – NSPS KKK; engines – NSCR, oxidation catalyst, MACT ZZZZ; dehy – condenser reboiler/flare; hot oil heater – fuel consumption; fugitive emissions LDAR	No further action at this time
NOx		123-0015		284.292	284.292			No further action at this time
VOC	DCP MIDSTREAM, LP- LUCERNE	123-0107	Natural gas processing plant	157.981	84.7656	10 engines, regeneration boiler, fugitive emissions	Engines – NSCR; fugitive emissions LDAR	No further action at this time
NOx		123-0107		345.862	135.528			No further action at this time
VOC	DCP MIDSTREAM, LP- MEWBOURN	123-0090	Natural gas processing plant	961.08	110.197	15 engines, EG dehydration unit, hot oil heater, stabilized condensate truck load-out rack, 4 stabilized condensate storage tanks	Engines – NSCR, MACT ZZZZ, NSPS JJJJ; hot oil heater – NSPS Dc; fugitive emissions LDAR	No further action at this time
NOx		123-0090		267.764	90.1387			No further action at this time
VOC	KERR-MCGEE GATHERING - FREDERICK CS	123-0184	Compressor station	652.648	88.9771	3 engines, TEG dehydration unit, storage tanks, fugitive VOC	Dehy – thermal oxidizer unit; tanks – flare; 1 engine – oxidizing catalyst, MACT ZZZZ; fugitive emissions LDAR	No further action at this time
NOx		123-0184		220.921	109.461			Analyzing potential additional NOx controls
VOC	KERR-MCGEE Hudson Station	123-0048	Compressor station	471.5	84.8216	7 engines, 2 TEG dehydration units, condensate storage tank battery, fugitive VOC	3 engines – NSCR; dehy – flare; tanks – flare; fugitive emissions LDAR	No further action at this time
NOx		123-0048		273.205	273.205			Analyzing potential additional NOx controls
VOC	KMC GEE FT LUPTON/PLATTE VALLEY/LANCASTER	123-0057	Compressor station	2109.48	232.654	7 engines, TEG dehydration unit, fugitive VOC	3 engines – NSCR; fugitive emissions LDAR	No further action at this time
NOx		123-0057		281.997	281.997			Analyzing potential additional NOx controls
VOC	WGR ASSET HOLDING CO - WATTENBERG PLANT	001-0025	Natural gas processing plant	165.949	157.289	5 engines, hot oil heater, regeneration heaters, gas turbine, loadout, fugitive VOC, storage vessel	Engines – oxidation catalyst, R7.XVII.E.3. cost analysis; hot oil and regeneration heaters and steam boiler – fuel consumption; turbine – fuel consumption, NSPS GG; loadout to leak tight trucks; fugitive emissions LDAR; dehy – thermal oxidizer; tanks – MACT HH	No further action at this time
NOx		001-0025		691.487	691.487			No further action at this time

Pollutant	Facility	AIRS ID	Facility purpose	Estimated emissions, uncon (tpy)	Estimated emissions, actual (tpy)	Major VOC or NOx emission points	Requirements	Summary conclusion
NOx	COLORADO INTERSTATE GAS CO CHEYENNE STN	123-0051	Compressor station	146.289	146.289	11 engines	Engines – oxidation catalyst, R7.XVII.E.3. cost analysis; turbine – dry low NOx combustion system, MACT ZZZZ; fugitive emissions LDAR	No further action at this time
NOx	SOUTHERN STAR CENTRAL GAS PIPELINE CHEYE	123-0078	Compressor station	201.2	201.2	Engine, generator emergency	Engines – MACT ZZZZ, R7.XVII.E.3. cost analysis; fugitive emissions LDAR	No further action at this time

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