

Dust Mitigation Plan

Archer Field Oil and Gas Development Plan

This Dust Mitigation Plan has been prepared by Chaco Energy Company (Chaco) for its Archer Field Oil and Gas Development Plan (OGDP) in Cheyenne County, Colorado. The Plan addresses the Energy & Carbon Management Commission (ECMC) requirement at Rule 304.c.(5) to prepare a Dust Mitigation Plan and the dust mitigation criteria in Rule 427. The Plan addresses the following locations:

Table 1. Locations

Location	Location ID	Qtr Qtr T12S R44W	Lat/Lon
Champlin 360 Amoco A #4	380504 (Re-entry)	NWSE Sec. 29	38.977390, -102.359945
Pelton 41-31 #1	380356 (Re-entry)	NENE Sec. 31	38.969823, -102.373764
Champlin Tank Pad	New	NWSW Sec. 29	38.977813, -102.369827
Pelton Tank Pad	New	NENE Sec. 31	38.970818, -102.372405

1.0 Soil Types

Natural Resources Conservation Service soil types for the locations, access, and flowlines are listed in Tables 2 through 5. Soil types are shown on the Form 2A, Soil Unit Maps.

The locations will use a combination of existing and new unpaved access roads. Access is shown on the Form 2A, Access Road Maps.

Buried off-location flowlines will tie in to the existing Ladder Creek Gathering System operated by Tumbleweed Midstream. Off-location flowlines are shown on the Form 2A, Related Location and Flowline Maps.

Table 2. Champlin 360 Amoco A #4

Disturbance	NRCS Soil Type	Description
Oil and Gas Location	19: Keith-Richfield silt loams 54: Wiley complex	Keith-Richfield silt loams, 0 to 2 percent slopes. The A-horizon is 0 to 6 inches of silt loam overlaying 6 to 10 inches of silty clay loam. Well drained. The depth to restrictive feature is more than 80 inches. Wiley complex, 0 to 3 percent slopes. The A-horizon is 0 to 3 inches of silt loam overlaying 3 to 23 inches of silt loam. Well drained. The depth to restrictive feature is more than 80 inches.
Access	19: Keith-Richfield silt loams	See above
Flowline	19: Keith-Richfield silt loams	See above

Table 3. Pelton 41-31 #1

Disturbance	NRCS Soil Type	Description
Oil and Gas Location	20: Keith-Ulysses silt loams	Keith-Ulysses silt loams, 1 to 4 percent slopes. The A-horizon is 0 to 6 inches of silt loam overlaying 6 to 10 inches of silty clay loam. Well drained. The depth to restrictive feature is more than 80 inches.

Access	19: Keith-Richfield silt loams	See above
	20: Keith-Ulysses silt loams	See above
	1422: Goshen silt loam	Goshen silt loam. The A-horizon is 0 to 13 inches of silt loam overlaying 13 to 32 inches of silty clay loam. Well drained. The depth to restrictive feature is more than 80 inches.
Flowline	20: Keith-Ulysses silt loams	See above
	1422: Goshen silt loam	See above

Table 4. Champlin Tank Pad

Disturbance	NRCS Soil Type	Description
Oil and Gas Location	19: Keith-Richfield silt loams	See above
Access	19: Keith-Richfield silt loams	See above
Flowline	Described under well location	Described under well location

Table 5. Pelton Tank Pad

Disturbance	NRCS Soil Type	Description
Oil and Gas Location	1422: Goshen silt loam	See above
Access	19: Keith-Richfield silt loams	See above
	1422: Goshen silt loam	See above
Flowline	Described under well location	Described under well location

2.0 Area of Soil Disturbance

Areas of disturbance are listed in Table 6.

Off-location flowline trenches will be approximately 2 feet wide for a 3-inch steel gas flowline.

Table 6. Areas of Disturbance

	Acres	Total
Oil and Gas Location		
Champlin 360 Amoco A #4	2.07	5.86
Pelton 41-31 #1	2.07	
Champlin Tank Pad	1.06	
Pelton Tank Pad	0.66	
Working Pad Surface		
Champlin 360 Amoco A #4	1.80	4.99
Pelton 41-31 #1	1.80	
Champlin Tank Pad	0.87	
Pelton Tank Pad	0.52	
Production Pad		
Champlin 360 Amoco A #4	0.23	1.85
Pelton 41-31 #1	0.23	
Champlin Tank Pad	0.87	
Pelton Tank Pad	0.52	
Access Road		
	Existing / New	
Champlin 360 Amoco A #4	0.23 / 0.85	1.08
Pelton 41-31 #1	0.22 / 0.01	0.23

	Acres	Total
Champlin Tank Pad	0.13 / 0.00	0.13
Pelton Tank Pad	0.09 / 0.03	0.12
Flowline		
Champlin 360 Amoco A #4	0.12	0.13
Pelton 41-31 #1	0.01	
Champlin Tank Pad	Described under well location	
Pelton Tank Pad	Described under well location	

3.0 Whether Access Roads are Paved

Access roads will be unpaved. They will be 15 feet wide and will accommodate emergency vehicles.

4.0 Anticipated Truck Trips

Locations are anticipated to require the truck trips listed in Table 7. Truck trips are minimized because Chaco anticipates 2 days are needed for well re-entry and 1 day for completion at each well location. During production, off-loading at each tank pad is anticipated to occur twice per month for produced water and four times per year for condensate. There are no residences (receptors) within 2,000 feet.

Table 7. Anticipated One-way Truck Trips

Location	Construction	Drilling	Completions	Interim Reclamation	Production Mo / Yr
Champlin 360 Amoco A #4	50	80	4	16	60 / 720
Pelton 41-31 #1	50	80	4	16	60 / 720
Champlin Tank Pad	50	0	0	16	66 / 792
Pelton Tank Pad	50	0	0	16	66 / 792
TOTAL	200	160	8	64	252 / 3,024

5.0 Best Management Practices

Best management practices to minimize fugitive dust are shown in Table 8.

Table 8. Best Management Practices

Activity	Best Management Practices
Speed Restrictions	<ul style="list-style-type: none"> Drivers will be instructed to maintain a speed of 25 mph on access roads to minimize fugitive dust, road wear, and erosion.
Regular Road Maintenance	<ul style="list-style-type: none"> Regular inspection will occur for access roads for evidence of inadequate drainage and formation of potholes. Grading, blading, and filling potholes will be performed to maintain the road surface and discourage vehicles from widening the roadway or contributing to erosion.
Restricting Construction Activity During High Wind Days	<ul style="list-style-type: none"> Construction will be scheduled to avoid high-wind warnings issued by the county.
Dust Suppression	<ul style="list-style-type: none"> Blowing soil and failure of the soil to stabilize and form a crust on a location during construction and after interim reclamation will indicate that a dust suppression BMP is needed. In that event, a water truck will be used to wet the pad surface.
Proppant	<ul style="list-style-type: none"> Proppant will not be used.

Activity	Best Management Practices
Interim Reclamation	<ul style="list-style-type: none">• Areas not needed for production will be reclaimed in accordance with Rule 1003.
Dust Tracking	<ul style="list-style-type: none">• Aggregate will be placed as needed at the apron where the access road ties into a public road. The aggregate will serve as a wheel shaker and erosion control for the tie in.
Topsoil Stockpile	<ul style="list-style-type: none">• Soil stockpiles will be mounded and sloped to prevent loose soils and promote vegetative growth.• Vehicle tracking perpendicular to the slope angle will be used to improve short term stabilization.• Vegetation will be allowed to establish, with crimped straw mulching as needed, in order to stabilize the stockpile, outcompete weeds, and promote soil microbial activity.