DKM

Public Service Commission
State of North Dakota

600 East Boulevard, Dept. 408
Bismarck, North Dakota 58505-0480
Web: www.psc.nd.gov
E-mail: ndpsc@nd.gov
Phone: 701-328-2400
ND Toll Free: 1-877-245-6685
Fax: 701-328-2410
TDD: 800-366-6888 or 711

INSPECTION REPORT

DATE OF INSPECTION: March 22, 2017

TYPE OF INSPECTION: Partial

PERMITTEE - MINE: Dakota Westmoreland Corporation (DWC) - Beulah Mine

PERMITS INSPECTED: KRSB-8603 and KRSB-8802

PERSONS ACCOMPANYING INSPECTOR: John Wang - field inspection
DeLane Bauer and Jim Wagner - brief periods during the field inspection
Jon Reinhardt - post-inspection follow-up

INSPECTION CONDITIONS: The inspection was conducted between 9:20 a.m. and 2:45 p.m. CDT. Sky conditions were mostly cloudy until 2:00 p.m. then became partly cloudy thereafter. The temperature ranged from the mid 20's to near 40° F and the wind was from the south-southeast at 20 to 30 miles per hour. Access was generally restricted to active operation areas because of soft or wet springtime conditions. The mine was nearly free of snow cover.

OVERBURDEN/COAL REMOVAL

Permit KRSB-8603:

There were no overburden removal operations occurring during the inspection. Coal was being loaded from the Iron Pit in the SE¼SW¼ of Section 20. The 777 end dump truck fleet was being used for coal hauling because of limited space in the active coal loading area. Pit water was being pumped to a detention area nearby where suitable plant growth material removal operations were completed in 2016. Overflow from the detention area drains to Pond 103. The 1570 dragline was idle for repair near the coal loading operation. DWC personnel indicated that Gold Pit mining is expected to resume in June 2017.

SURFACE WATER MANAGEMENT

Three sedimentation ponds (Ponds 1, 81, and 85) were reported to be discharging off-permit at the time of inspection. The following ponds were inspected and their water elevations noted in reference to the Permanent Pool Elevation (PPE) or spill elevation. A reference to spill elevation was noted if a PPE

marker was not visible or if marker interpretation was unclear. The top of riser refers to the pond's principal spillway. As noted in several inspection reports for the second half of 2016, PPE markers could not be located at some ponds. The PPE for every sediment pond must be clearly marked as required by NDAC 69-05.2-13-04(8).

Pond (or Sump)	Elevation	Comments
100	6 feet below emergency spillway	
101	2 feet below PPE	
102	4 feet below top of riser	
107	1½ feet below PPE	
108	4 feet below top of riser	
85	3 feet below top of riser	began discharging late on day of inspection
96	5 feet below top of riser	
97	5 feet below top of riser	
98	4 feet below top of riser	
99E (Sump)	water about 6 to 8 feet below emergency spillway	appears to have been receiving water pumped from sump to be converted to Pond 106
103	8 feet below top of riser	
104	10 feet below top of riser	
70	5 feet below top of riser	receiving water pumped from the Charlie Pit sump in the SW¼ of Section 19 of Permit KRSB-8802 on day of inspection

Permit KRSB-8603:

The sump in Special Variance Zone #7 (spoil stockpile to reclaim Pond 86 and its associated sump that also contains haul road runoff) located in the NW¼SW¼ of Section 15 was viewed during the inspection. Please refer to Figures 1 and 8 for the sump location. It appeared that the spoil stockpile sump overflowed and cut down to an adjoining linear sump to the north that was apparently installed to detain runoff from reclaimed land for which ten-year revegetation period was initiated in 2010 as pictured in Figure 2. It also appeared that comingled sump drainage flowed through a silt fence to the undisturbed intermittent stream bank in the NW¼SW¼ of Section 15 as pictured in Figure 3. Runoff detained in the spoil stockpile and haul road runoff sump must be pumped to Pond 86 as specified on page 3.8.8 of the KRSB-8603 permit rather than being discharged through a silt fence.

Diversion 99E-B located in the in the E½E½ of Section 20 was viewed during the inspection. The diversion routes Silver Pit and haul road runoff west to Sump 99E. Please refer to Figure 1 for the diversion location. As pictured in Figures 4 and 5, the diversion requires maintenance to remove sediment where it has accumulated about 150 feet east of Sump 99E and where sediment laden runoff is at risk of overtopping the diversion and causing sediment deposition in the undisturbed intermittent stream buffer zone.

As noted in the February 15, 2017 inspection report, DWC was instructed to remove a small spoil pile placed on the east side of the Pond 104 downstream embankment (north side of the haul road) adjacent the suitable plant growth material stripping edge. The spoil pile had been removed and silt fences had been installed on the pond embankment as observed during the March 22, 2017 inspection. The area should be further reviewed during the next Beulah Mine inspection.

Permit KRSB-8802:

DWC personnel were setting up a pump to begin lowering the sump located in the SE¼SE¼NE¼ of Section 19 by pumping water to Pond 50.

BACKFILLING AND GRADING

Permit KRSB-8603:

Silver Pit spoil grading has been ongoing proceeding westward in the W½NE¼ of Section 20. A dozer was leveling spoil in the area during the inspection.

The surface condition and reclamation status of grade approval area Silver3-2016 (revised October 5, 2016 and approved October 10, 2016) in the NE¼ of Section 20 was reviewed during the inspection. Please refer to Figure 1 for the grade approval area location. As noted in the February 15, 2017 inspection report, several piles of coal slack observed within the grade approval area in the SE¼NE¼ of Section 20 will need to be removed followed by an inspection prior to resuming suitable plant growth material (SPGM) respread operations in 2017. During the March 22, 2017 inspection more widespread disturbance of graded spoil (spoil piles and berms, and equipment ruts) in the grade approval area was observed across nearly the entire east-west trending south portion of the area (about 9 acres) and across about the western one-third of the north-south trending north portion of the area (about 5 acres). DWC personnel were informed that suitable plant growth material (SPGM) respread operations may not resume for the grade approval area in 2017 until the graded spoil disturbance areas are regraded to conform to the approved postmine topography and the regraded spoil areas are inspected and approved for SPGM respreading by the Reclamation Division.

REVEGETATION

Permit KRSB-8603:

DWC personnel inquired during the inspection about removing between 600 and 800 feet of silt fence that had been installed at the mining disturbance boundaries along the east and west banks of the undisturbed intermittent streambank in the SW¼ of Section 15 following suitable plant growth material respreading and stabilization for grade approval areas Gold2-2011 and Gold1-2009 adjacent the east bank, and for Gold1-2013 adjacent the west bank. Please refer to Figure 1 for the silt fence locations. All of the grade approval areas were reclaimed to postmine native grassland. The ten-year revegetation period for grade approval areas adjacent the east bank were originally initiated in 2012 but were re-initiated in 2014, while the ten-year revegetation period for the grade approval area adjacent the west bank was initiated in 2014. At the time of inspection as pictured in Figures 6 and 7, the east bank silt fence needed repair but the reclaimed native grassland was well vegetated and lacked any indication of erosion, while the west bank silt fence was in good condition but reclaimed native grassland erosion documented in the June 11, 2015 inspection report may not have been repaired. DWC personnel were informed that the silt fence removal request will be further evaluated during the next Beulah Mine inspection.

ROADS

Permit KRSB-8603:

DWC personnel were informed during the inspection that haul road dust created by the 777 truck fleet hauling coal should be controlled by water application.

An erosional gully through undisturbed land, and attendant siltation in an intermittent stream, were observed during the inspection on the north side of the haul road in the S½SW¼ of Section 15. Please refer to Figure 1 for the general location and Figures 8 and 9 for the detailed location of haul road erosion and siltation. As pictured in Figures 8 and 9, the Pond 85 embankment functions as the intermittent stream haul road crossing at this location. The intermittent stream tributary to Brush Creek drains from Permit KRSB-8603 northward into Permit NACC-1302 and through a culvert under the Coyote Creek Mine haul road in the SW¼SW¼SW¼ of Section 10. As described by DWC personnel, runoff from the haul road segment crossing the intermittent stream in the S½SW¼ of Section 15 in Permit KRSB-8603 is controlled by conveying runoff south to Pond 85 by way of a drainage grate culvert inlet along the haul road's north berm and through a culvert under the haul road to an outlet at Pond 85 as pictured in Figure 9. The haul road drainage grate culvert inlet is also pictured in Figure 10 and the haul road drainage culvert outlet to Pond 85 is also pictured in Figure 11. At some unknown time the haul road drainage grate culvert inlet and uncontrolled haul road runoff began flowing over the north haul road berm at the drainage grate location and formed an erosional gully in the undisturbed intermittent stream bank north of the Pond 85 embankment. Figures 12 and 13 picture the uncontrolled haul road runoff flow over the haul road berm at the drainage grate location. As evidenced from the 2016 aerial photography in Figures 8 and 9, the haul road runoff erosion and siltation is not a recent development. Figures 14a, 14b, and 14c picture the erosional gully and siltation in three consecutive photographs facing east and rotating north atop the north haul road berm at the upper end of the concrete drainage channel also pictured and labeled in Figure 9 that no longer functions as a haul road runoff control structure. Figure 15 pictures the haul road runoff erosion and siltation as viewed from the intermittent stream's west bank about 600 feet north of the haul road. Siltation in the intermittent stream occurred in an area of soil mapped as 0/0 inch lift (topsoil/subsoil salvage thickness) map unit 85 (strongly saline land) that has no topsoil or subsoil salvage value for mining reclamation according to the soil survey in Section 2.4 of Permit KRSB-8603.

Based on the erosional gully and attendant siltation observed during the inspection on the north side of the haul road in the S½SW¼ of Section 15 in Permit KRSB-8603, Notice of Violation 1701 is being issued to Dakota Westmoreland Corporation for failure to maintain the haul road to control or prevent erosion and siltation in violation of North Dakota Administrative Code 69-05.2-24-01(2)(a).

MISCELLANEOUS

Beulah Mine permit areas and numbers, and referenced locations of interest are depicted on Figure 1.

Bill Gunnerson
Environmental Scientist

cc: Jon Reinhardt
Jesse Noel
Jody Mann
OSM Casper Area Office
Mercer and Oliver County Auditors

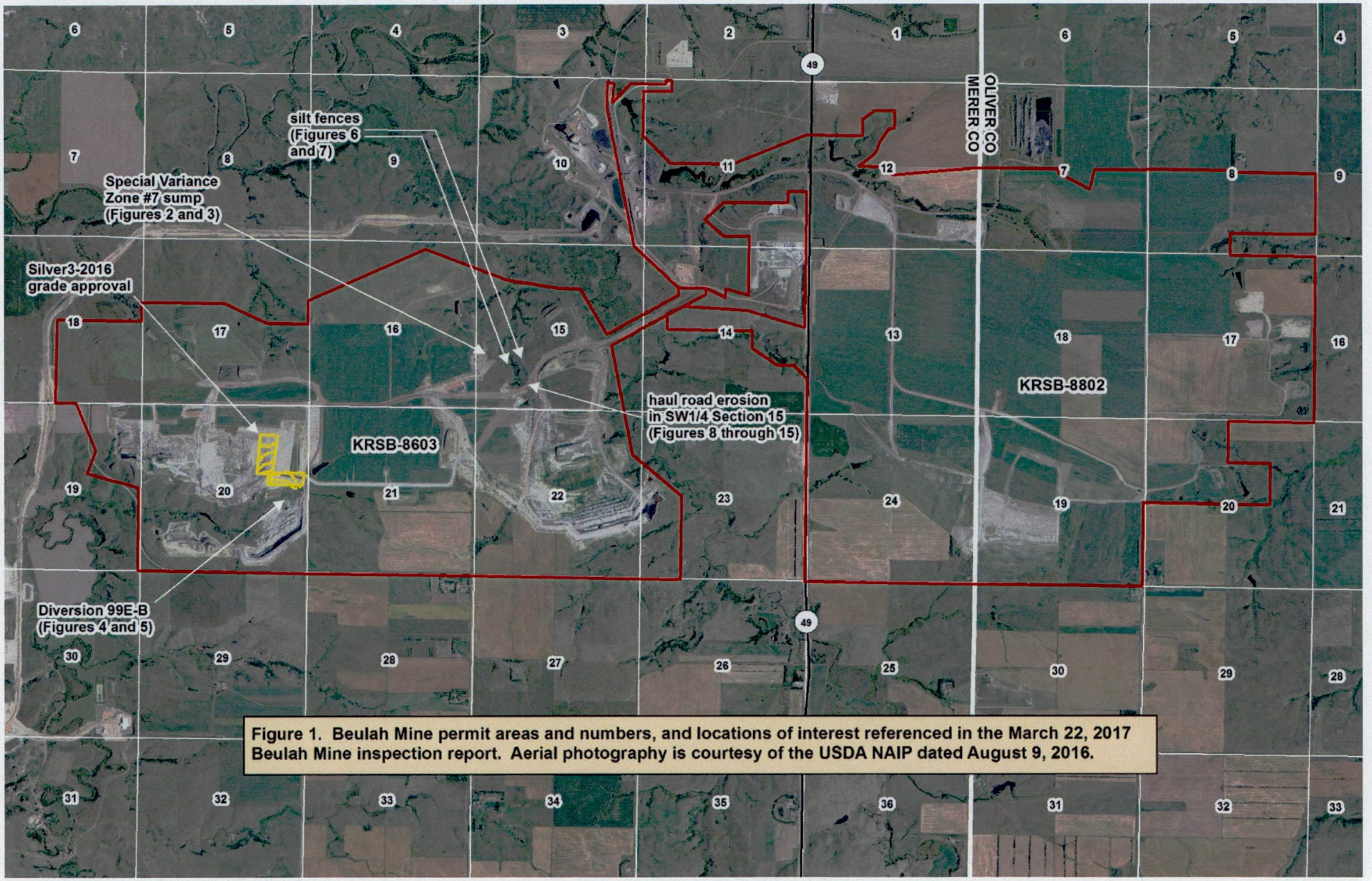

Figure 1. Beulah Mine permit areas and numbers, and locations of interest referenced in the March 22, 2017 Beulah Mine inspection report. Aerial photography is courtesy of the USDA NAIP dated August 9, 2016.

Figure 2. Special Variance Zone #7 spoil stockpile sump overflow to an adjoining linear sump to the north that was apparently installed to detain runoff from reclaimed land - facing north - see Figures 1 and 8 for location.

Figure 3. Special Variance Zone #7 spoil stockpile sump and adjoining linear sump for reclaimed land comingled drainage flow through a silt fence to the undisturbed intermittent stream bank in the NW¼SW¼ of Section 15 - facing north - see Figures 1 and 8 for location.

Figure 4. Sediment accumulated in Diversion 99E-B about 150 feet east of Sump 99E where sediment laden runoff is at risk of overtopping the diversion and causing sediment deposition in the undisturbed intermittent stream buffer zone to the south - facing west with Sump 99E in background - see Figure 1 for location.

Figure 5. Sediment accumulated in Diversion 99E-B about 150 feet east of Sump 99E where sediment laden runoff is at risk of overtopping the diversion and causing sediment deposition in the undisturbed intermittent stream buffer zone to the south - facing south with Iron Pit spoil in background - see Figure 1 for location.

Figure 6. Silt fence installed at the mining disturbance boundary along the east bank of the undisturbed intermittent streambank in the SW¼ of Section 15 for grade approval areas Gold2-2011 and Gold1-2009 - facing south - see Figure 1 for location.

Figure 7. Silt fence (in background) installed at the mining disturbance boundary along the west bank of the undisturbed intermittent streambank in the SW¼ of Section 15 for grade approval area Gold1-2013 - facing southwest - see Figure 1 for location.

Figure 8. Detailed location of haul road erosion and siltation in the S½SW¼ of Section 15 where the Pond 85 embankment functions as the intermittent stream haul road crossing at this location. Also shown in the upper left is Special Variance Zone #7 (spoil stockpile to reclaim Pond 86 and its associated sump). Aerial photography is courtesy of the USDA-NAIP dated August 9, 2016 - see Figure 1 for location.

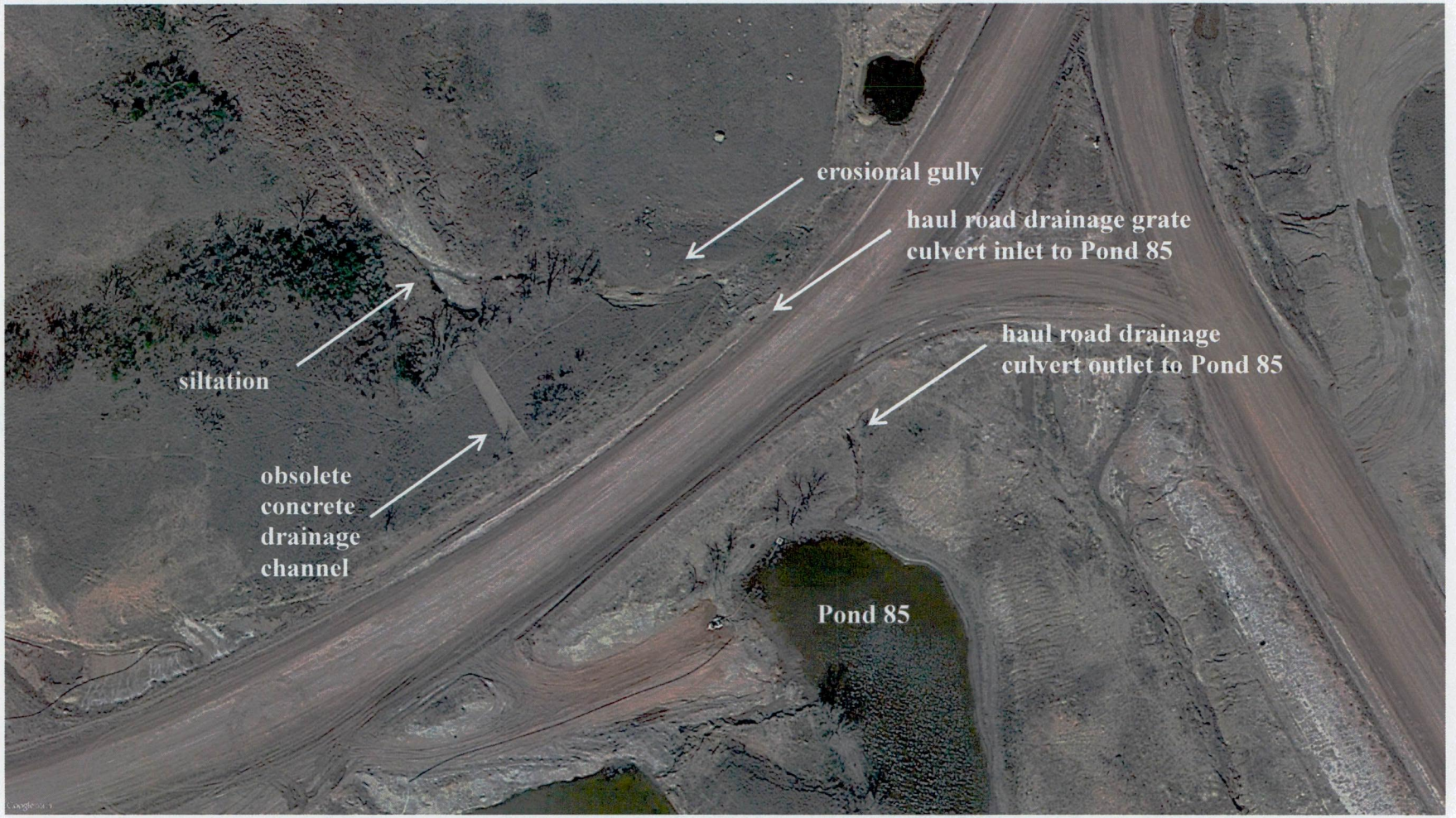

Figure 9. Locations of haul road erosion and siltation as well as drainage grate culvert inlet on north side of haul road and haul road drainage culvert outlet to Pond 85 on south side of the haul road in the S½SW¼ of Section 15 in Permit KRSB-8603. Aerial photography is courtesy of Google Earth dated May 2, 2016 - see Figure 1 for location.

Figure 10. Haul road drainage grate culvert inlet along north haul road berm - facing north - see Figure 9 for location.

Figure 11. Haul road drainage culvert outlet to Pond 85 - see Figure 9 for location.

Figure 12. Uncontrolled haul road runoff flow over or through the north haul road berm at the drainage grate location - facing north with headward extent of erosional gully in background - see Figure 9 for location.

Figure 13. Uncontrolled haul road runoff flow over or through the north haul road berm at the drainage grate location as viewed from the intermittent stream's east bank - facing southwest with DWC pickup truck parked on south haul road shoulder.

Figure 14a. North haul berm in right foreground and headward extent of erosional gully on left - facing east with subsoil stockpile 16-07-2 in right background - rotate northeast (left) with following Figure 14b.

Figure 14b. Erosional gully in foreground and siltation in intermittent stream on left - facing northeast with Coyote Station in background - rotate north (left) with following Figure 14c or east (right) with preceding Figure 14a.

Figure 14c. Intermittent stream siltation in center - facing north with obsolete concrete drainage channel in foreground - rotate northeast (right) with preceding Figure 14b.

Figure 15. Overview of haul road runoff erosional gully (left background), siltation in intermittent stream (center foreground), and obsolete concrete drainage channel (center background) as viewed from the intermittent stream's west bank about 600 feet north of the haul road - facing south-southeast with DWC pickup truck parked on south haul road shoulder.