

To: Project Team (EPA, GeoStat, GeoSyntec, KDHE, and KNC) via e-mail  
 From: A Burke  
 Date: November 14, 2006

**RCRA Field Investigation Update 10-31-2006**

Planning and Field Work Completed for 10/1 through 10/31/2006. The recovery system optimization study is continuing.

Configuration 2 was started on September 13, 2006 and completed on October 26, 2006. At that time, the wells were turned off in preparation for evaluation of the non-pumping groundwater flow.

The second configuration included shutdown of an additional 17 wells. The pumping wells in this configuration were centered in areas of elevated chromium and nitrate plus nitrite.

The following hydraulic optimization study activities have been completed or are underway:

Configuration No.	Description	Wells Shutdown	2006 Schedule
1	Shutdown of select wells located upgradient and/or outside the suspected source areas	TW-16, TW-17, TW-19, TW-23, TW-36, TW-37, TW-38, TW-52, TW-55, TW-56, TW-76, and TW-78	Start: August 3 Finish: September 13 Duration: 6 weeks
2	Shutdown of select upgradient and cross gradient wells	Wells shutdown under configuration 1 plus TW-18, TW-39, TW-40, TW-48, TW-49, TW-51, TW-53, TW-54, TW-57, TW-58, TW-67, TW-73, TW-74, TW-75, TW-77, TW-86, TW-94	Start: September 14 Finish: October 26 Duration: 6 weeks
Shutdown Evaluation	Shut down of all wells	All	Start: October 27 Finish: October 31 Duration: 4 days
3	Minor modifications to Configuration 2	Wells shutdown under configuration 2 with TW-87 shutdown and TW-94, and TW-77 restarted.	Start: November 1 Finish: December 15 Duration: 6 weeks

KNC received approval to contract with Layne-Christensen (Layne) to continue the drilling of the Dakota monitoring well at SWMU 4.



Activities Planned for November. KNC will begin planning for pumping tests to be conducted during late November and early December 2006. The pumping tests are part of the optimization program.

KNC will continue groundwater sampling of select wells and groundwater bi-weekly groundwater level monitoring during operation under Configuration 3, which was started on October 31, 2006.

KNC will finalize arrangements with Layne to begin the deeper Dakota well at SWMU 4 and Layne will also assist in completing the existing boring by converting it into a monitoring or recovery well. Due to Layne's previous commitments, they will not be able to start onsite until mid December 2006.

Findings:

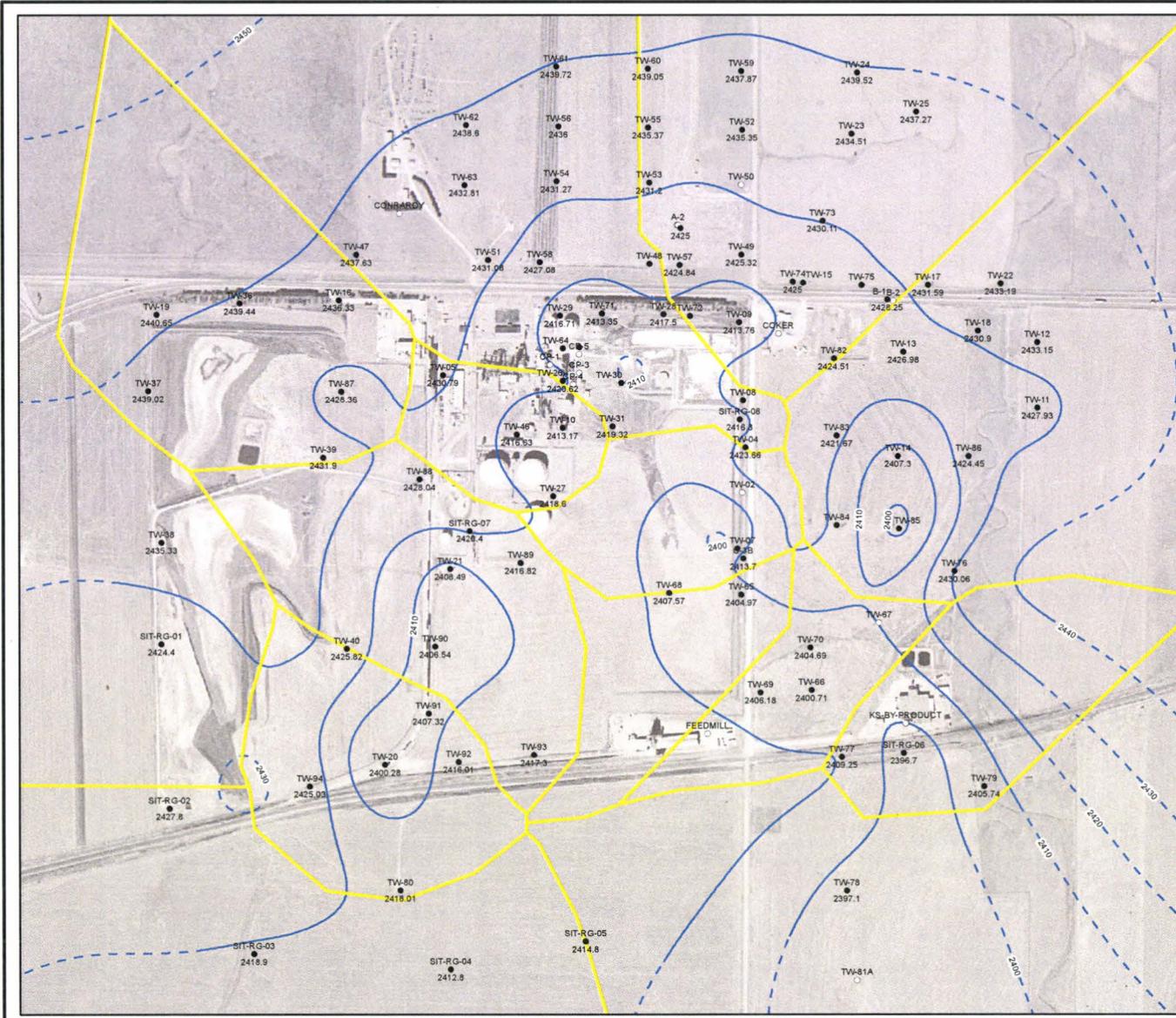
KNC continued to conduct biweekly groundwater level monitoring to track changes in the potentiometric surface as a result of the optimization activities. To date, Optimization Configurations 1 and 2, and the shutdown evaluation have been completed.

Figure 2-1 shows the potentiometric surface and capture zones at the completion of Optimization Configuration 2. Figure 3-2 shows the chromium concentrations at the completion of Optimization Configuration 2. The potentiometric surface at the completion of the shutdown test is shown on Figure 4-1. Optimization Configuration 3 is being implemented currently.

To date, no adverse groundwater impacts have been observed as a result of the optimization program. Total chromium, dissolved chromium, and nitrate plus nitrite concentrations have shown small fluctuations (upward and downward) during the optimization activities. The fluctuations observed to date are consistent with the error bars of the laboratory analyses. The groundwater concentrations will continue to be monitored closely during the remainder of the optimization program.

Recommendations:

No additional recommendations are provided at this time.

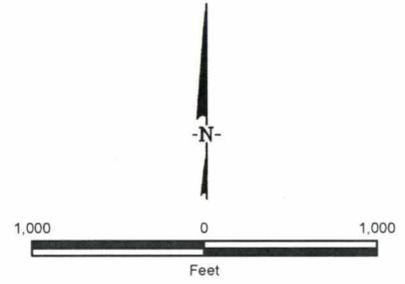


**LEGEND**

- MONITORING WELL GAUGED OCTOBER 24, 2006 ALONG WITH GROUNDWATER ELEVATION (FT AMSL)
- OTHER WELL WITHIN STUDY AREA NOT GAUGED OCTOBER 24, 2006
- POTENTIOMETRIC SURFACE CONTOUR (FT AMSL) - OCTOBER 24, 2006 (DASHED WHERE INFERRED)

**NOTES:**

1. YELLOW LINES INDICATE GROUNDWATER CAPTURE ZONE BOUNDARIES.
2. OPTIMIZATION WELL PUMPING CONFIGURATION 2.



**POTENTIOMETRIC SURFACE AND GROUNDWATER CAPTURE ZONES - POST PUMPING OPTIMIZATION 2 CONFIGURATION**

PREPARED BY: **KOCH**  
 KOCH NITROGEN COMPANY  
 11556 US HIGHWAY 50 - P.O. BOX 1337  
 DODGE CITY, KS 67801

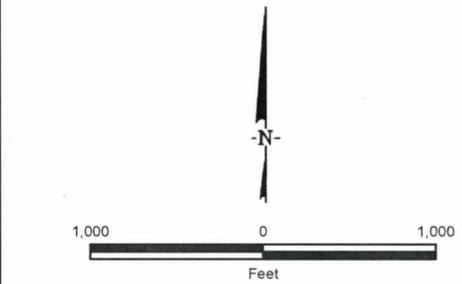
PROJECT.	FIGURE NO. 2-1
DATE. NOVEMBER 2006	FILE NO.

**LEGEND**

- MONITORING WELL SAMPLED IN OCTOBER 2006 - DISSOLVED CHROMIUM VALUE USED FOR CONTOURING
- MONITORING WELL SAMPLED IN OCTOBER 2006 - TOTAL CHROMIUM USED FOR CONTOURING
- OTHER WELL WITHIN STUDY AREA NOT SAMPLED IN OCTOBER 2006
- - - CHROMIUM 0.01 mg/L CONCENTRATION ISO-CONTOUR

**NOTES:**

1. CHROMIUM PLUME ILLUSTRATED WITH CONCENTRATIONS (mg/L) IN THE FOLLOWING INCREMENTS: 0.05 (LIGHTEST COLOR), 0.1, 0.2, AND 0.3 (DARKEST COLOR).
2. DISSOLVED CHROMIUM VALUES (mg/L) ARE INDICATED IN GOLD.
3. TOTAL CHROMIUM VALUES (mg/L) ARE INDICATED IN BLUE.
4. DISSOLVED CHROMIUM VALUES WERE USED FOR CONTOURING WHERE AVAILABLE - TOTAL CHROMIUM VALUES WERE USED WHERE NO DISSOLVED CHROMIUM VALUES WERE AVAILABLE
5. OPTIMIZATION WELL PUMPING CONFIGURATION 2.



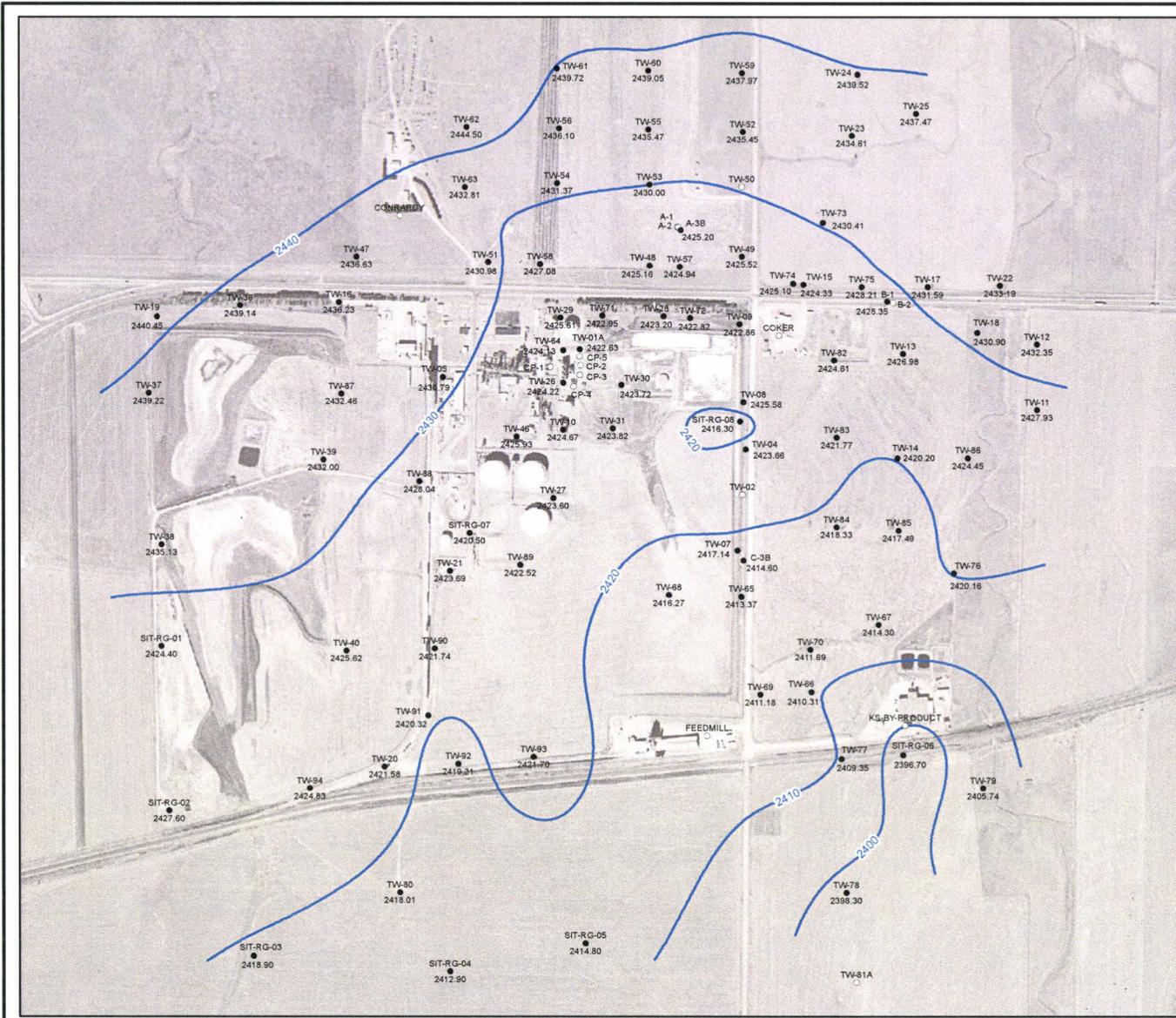
**CHROMIUM PLUME - OCTOBER 2006 - POST PUMPING OPTIMIZATION 2 CONFIGURATION**

PREPARED BY:



PROJECT.	FIGURE NO.	3-1
DATE. NOVEMBER 2006	FILE NO.	



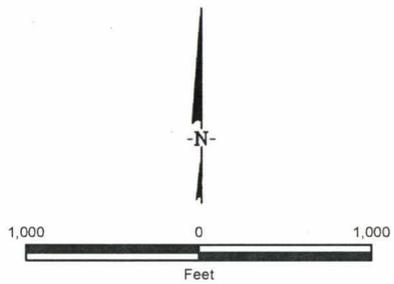


**LEGEND**

- MONITORING WELL GAUGED OCTOBER 30, 2006 ALONG WITH GROUNDWATER ELEVATION (FT AMSL)
- OTHER WELL WITHIN STUDY AREA NOT USED FOR OCTOBER 30, 2006 POTENTIOMETRIC SURFACE CONTOURING
- POTENTIOMETRIC SURFACE CONTOUR (FT AMSL) - OCTOBER 30, 2006

**NOTE:**

THIS GAUGING EVENT OCCURRED WHEN ALL PUMPING WELLS WERE TURNED OFF.



**GROUNDWATER ELEVATIONS AND POTENTIOMETRIC SURFACE CONTOURS - OCTOBER 30, 2006**

PREPARED BY:		 <b>KOCH</b> KOCH NITROGEN COMPANY 11556 US HIGHWAY 56 - P.O. BOX 1337 DOUGIE CITY, KS 67601
PROJECT:	FIGURE NO. 4-3X	
DATE: OCTOBER 2006	FILE NO.	