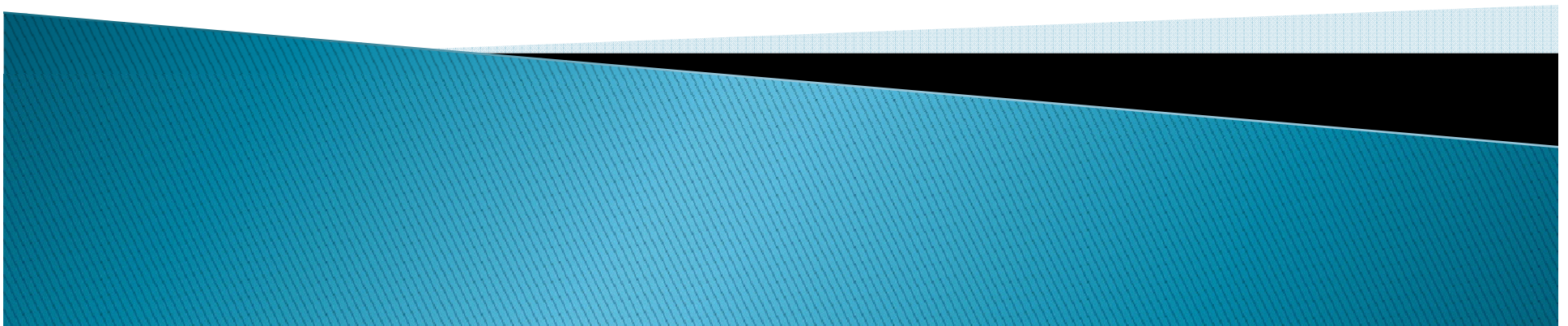
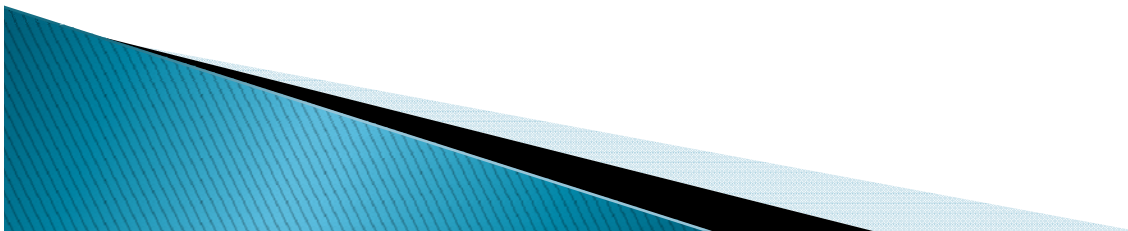


Chemical Commodities, Inc. – Olathe, Kansas Remedial Design



Remedial Design Contractor – MWH

- ▶ Project Manager – Brian Broderick
 - Professional Engineer
- ▶ Field Team Leader – Karin Wilhelm
 - Senior Environmental Scientist
- ▶ Design Engineer – Jeff TeGrotenhuis
 - Professional Engineer



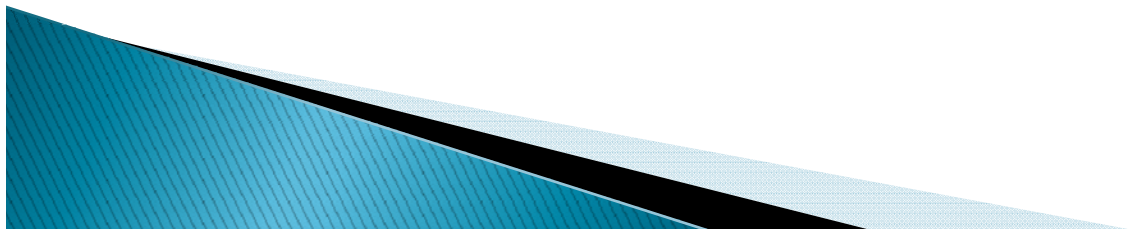
What is Remedial Design?

- ▶ Process of carefully and methodically collecting, evaluating, and using site data to design the Remedial Action to facilitate safe, efficient, and effective implementation.



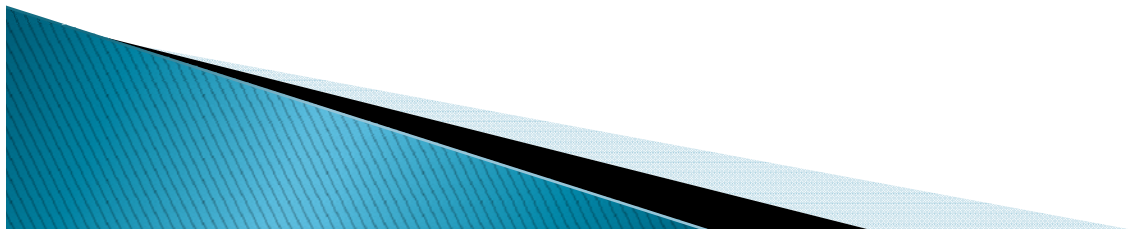
Remedial Design Milestones

ACTIVITY	DATE COMPLETED
1. Pre-Remedial Design Data Collection	Completed
2. Remedial Design Work Plan	Approved by EPA
3. Data Collection	September–November 2009
4. Preliminary (30%) Design •EPA Review and Approval	May 2010
5. Pre-Final (90%) Design •EPA Review and Approval	To be determined
6. Final (100%) Design •EPA Review and Approval	To be determined



Remedial Design Milestones

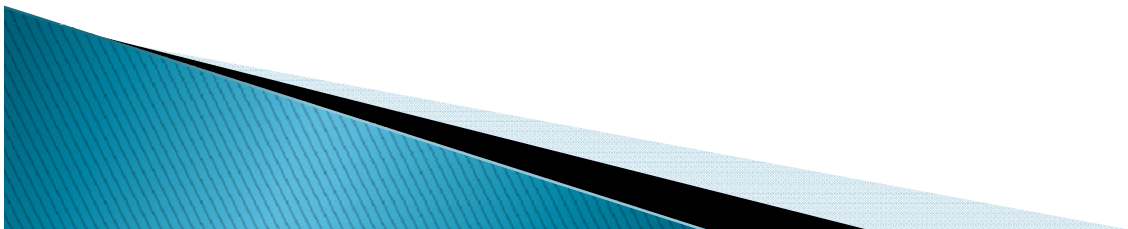
ACTIVITY	DATE COMPLETED
1. Pre-Remedial Design Data Collection	Completed
2. Remedial Design Work Plan	Approved by EPA
3. Data Collection	September–November 2009
4. Preliminary (30%) Design •EPA Review and Approval	May 2010
5. Pre-Final (90%) Design •EPA Review and Approval	To be determined
6. Final (100%) Design •EPA Review and Approval	To be determined



Pre-Remedial Design March 2009

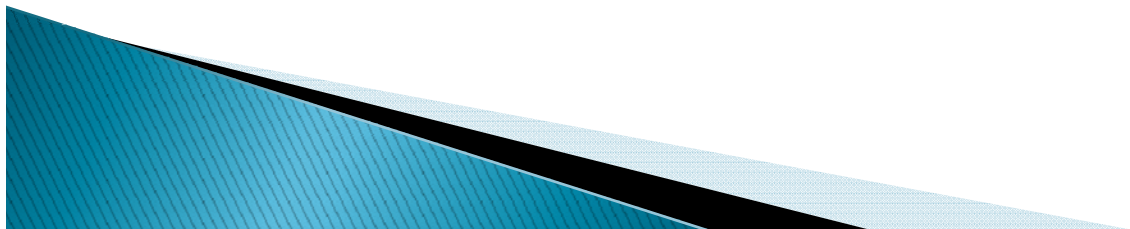
Groundwater Gauging and Sampling

- ▶ Confirmed current groundwater flow direction.
- ▶ Confirmed current concentrations in groundwater.
- ▶ Confirmed site remedy is appropriate.



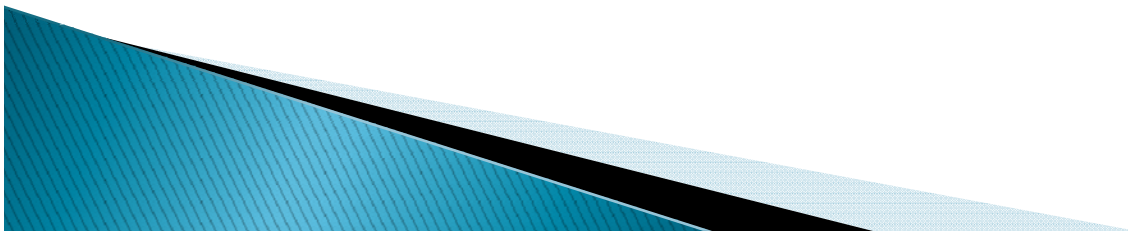
Remedial Design Milestones

ACTIVITY	DATE COMPLETED
1. Pre-Remedial Design Data Collection	Completed
2. Remedial Design Work Plan	Approved by EPA
3. Data Collection	September–November 2009
4. Preliminary (30%) Design •EPA Review and Approval	May 2010
5. Pre-Final (90%) Design •EPA Review and Approval	To be determined
6. Final (100%) Design •EPA Review and Approval	To be determined

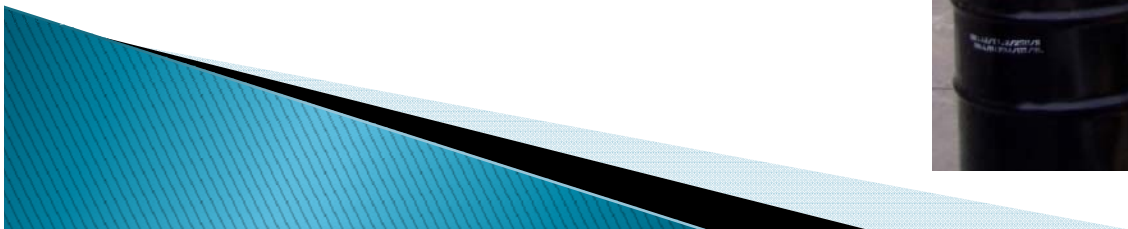


Remedial Design Field Work (September–November 2009)

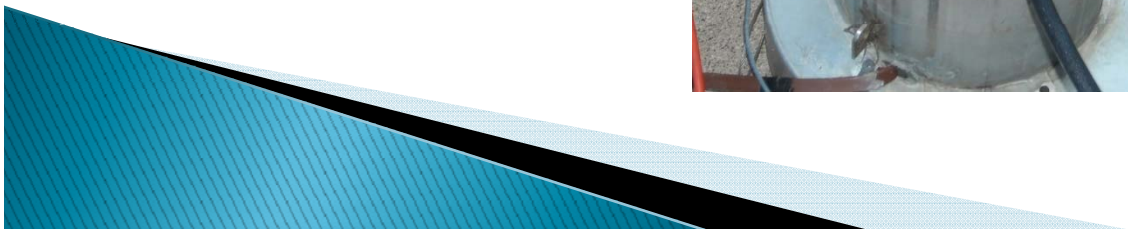
- ▶ Installation of new wells.
- ▶ Data collection along Ocheltree Street.
- ▶ Geophysical soil data for trench and excavation design.
- ▶ Groundwater sampling.
- ▶ Survey of future soil cap area.



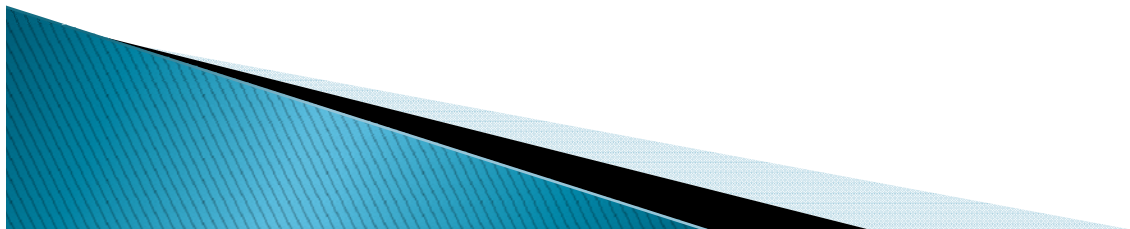
Well Installation and Geophysical Drilling Activities



Groundwater Sampling Activities

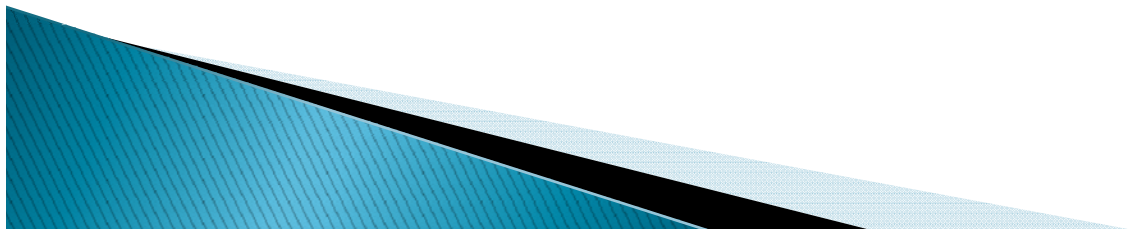


Survey Activities



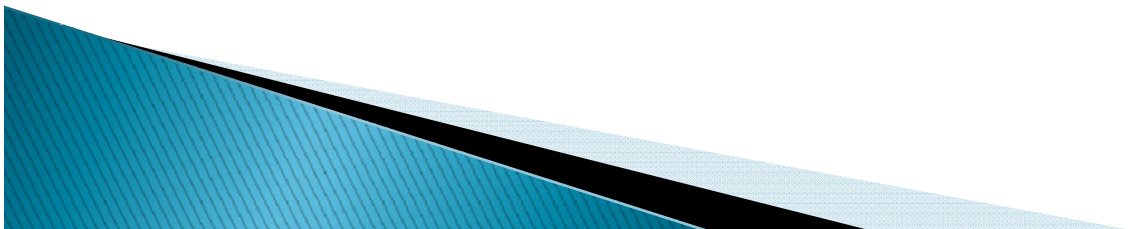
Remedial Design Milestones

ACTIVITY	DATE COMPLETED
1. Pre-Remedial Design Data Collection	Completed
2. Remedial Design Work Plan	Approved by EPA
3. Data Collection	September–November 2009
4. Preliminary (30%) Design •EPA Review and Approval	May 2010
5. Pre-Final (90%) Design •EPA Review and Approval	To be determined
6. Final (100%) Design •EPA Review and Approval	To be determined



30%, 90%, and Final Design

- ▶ Compile and Understand Data
- ▶ Prepare Basis of Design
- ▶ Design Details
 - Off-site Oxidant Delivery
 - Large Diameter Auger Excavation/Oxidant Delivery
 - Trench
 - Cap
- ▶ Mitigate Potential Construction Issues (dust, noise, traffic, etc.)



Questions?

ACTIVITY	DATE COMPLETED
1. Pre-Remedial Design Data Collection	Completed
2. Remedial Design Work Plan	Approved by EPA
3. Data Collection	September–November 2009
4. Preliminary (30%) Design •EPA Review and Approval	May 2010
5. Pre-Final (90%) Design •EPA Review and Approval	To be determined
6. Final (100%) Design •EPA Review and Approval	To be determined

