

Chromium Project Overview for the Radioactive and Hazardous Materials Committee

November 3, 2017

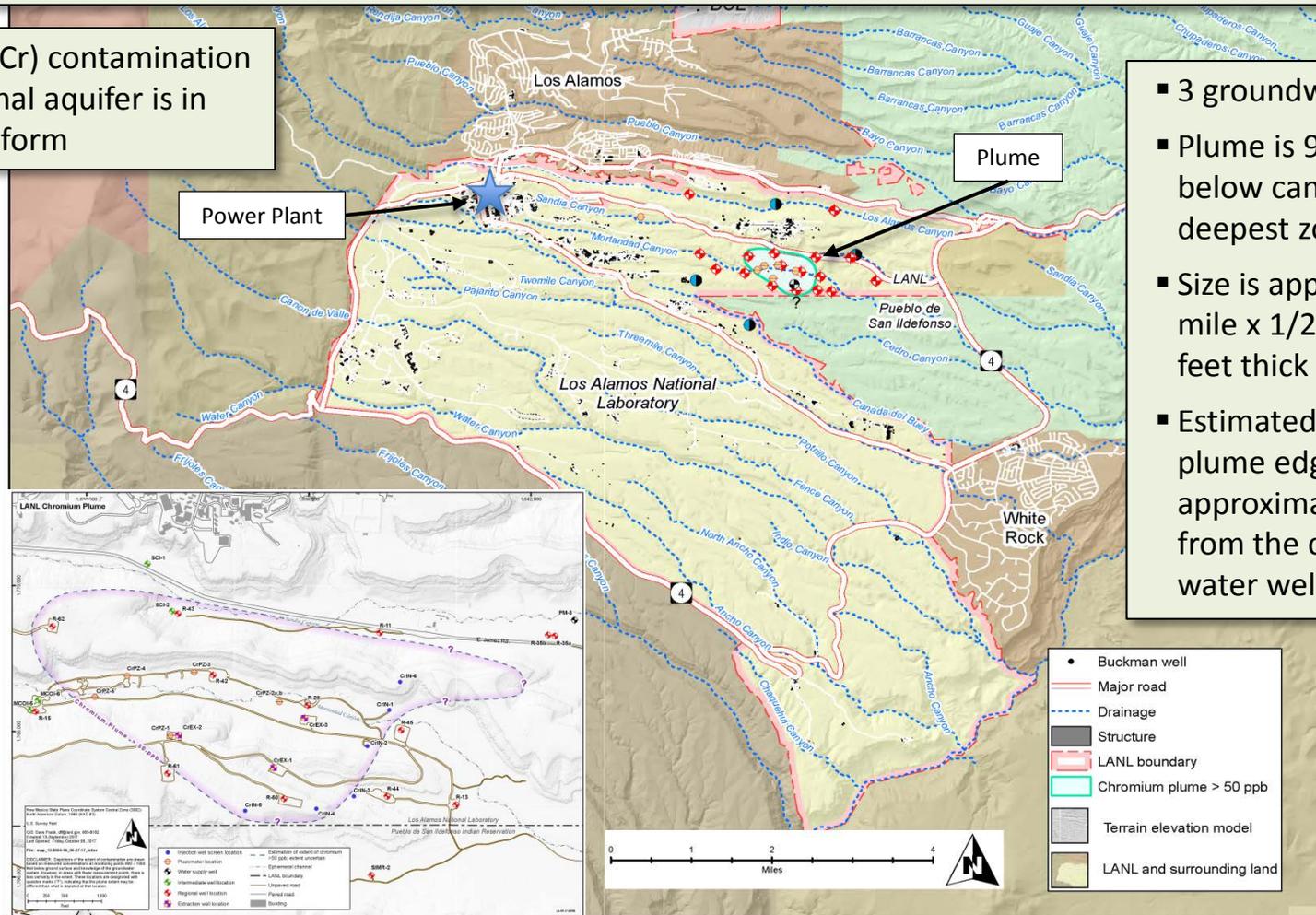
Topics

- Project Background
- Plume Control Interim Measure
- New Injection Well and Related Information
- Regulatory/Technical Path Forward for CrIN-6
- Evaluation of Final Remedial Options
- Project Timeline

WATER Chromium in Groundwater Beneath LANL

- Potassium dichromate used in cooling towers at a Laboratory power plant
- Up to 72,000 kg (159,000 lb) released from 1956-72 in hexavalent form [Cr(VI)]

Chromium (Cr) contamination in the regional aquifer is in hexavalent form



- 3 groundwater zones
- Plume is 900–1,000 feet below canyon bottom in deepest zone
- Size is approximately 1 mile x 1/2 mile x <50 feet thick
- Estimated downgradient plume edge is approximately 1/4 mile from the closest drinking water well

Chromium Plume Control Interim Measure

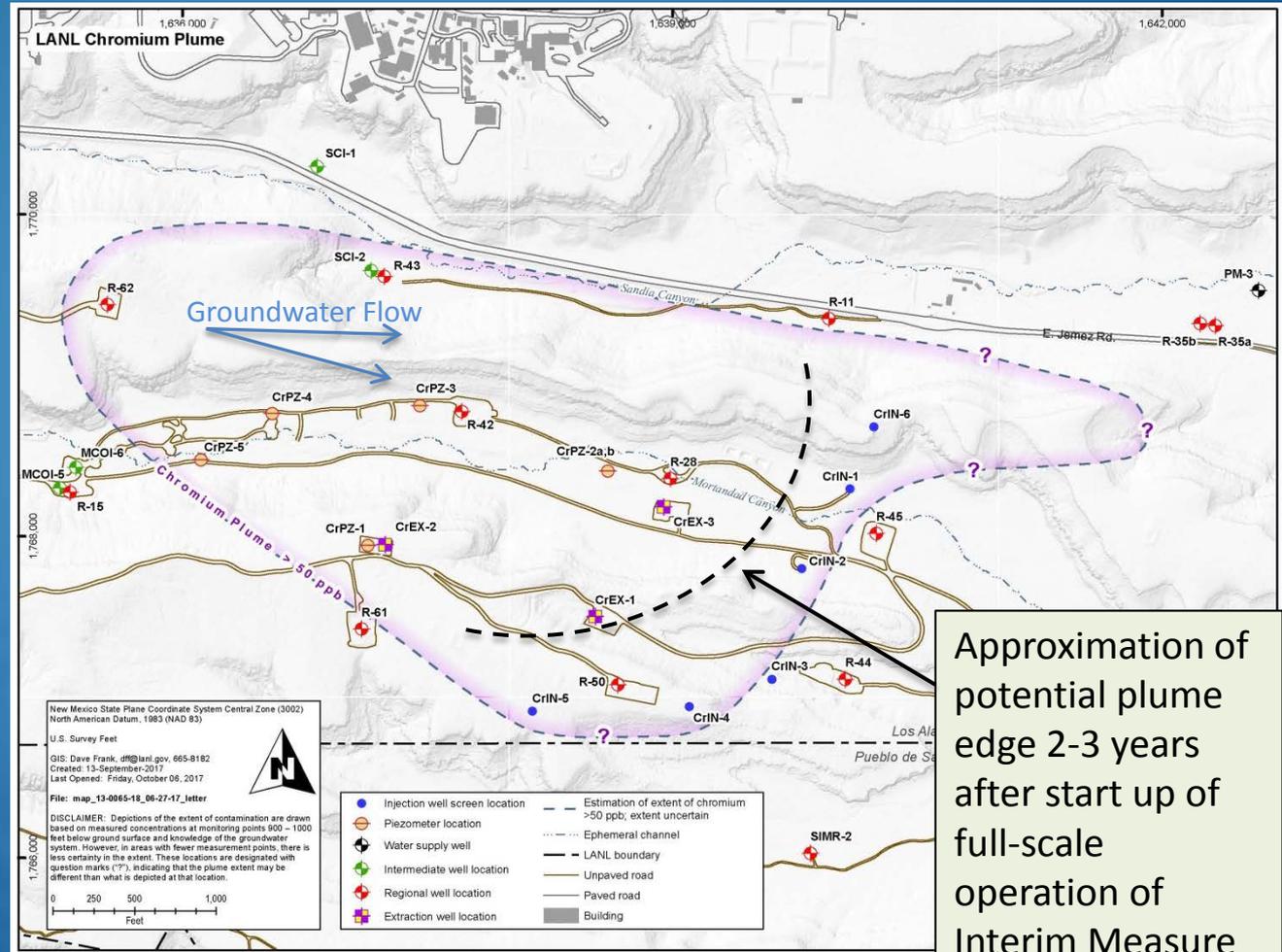
Beginning in 2014, the Laboratory advanced actions to address plume growth

Interim Measure Objective

Control plume migration along the southern and eastern plume edge

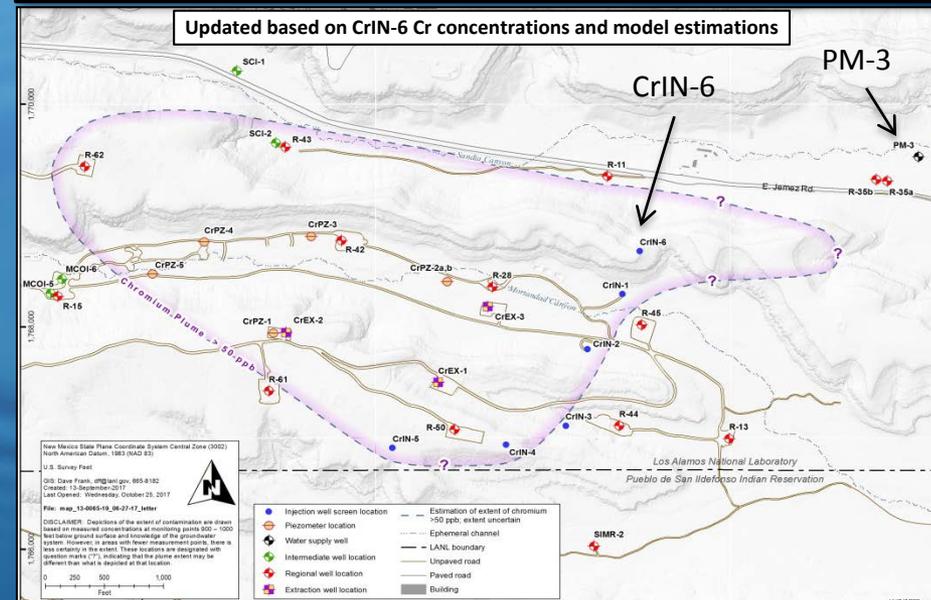
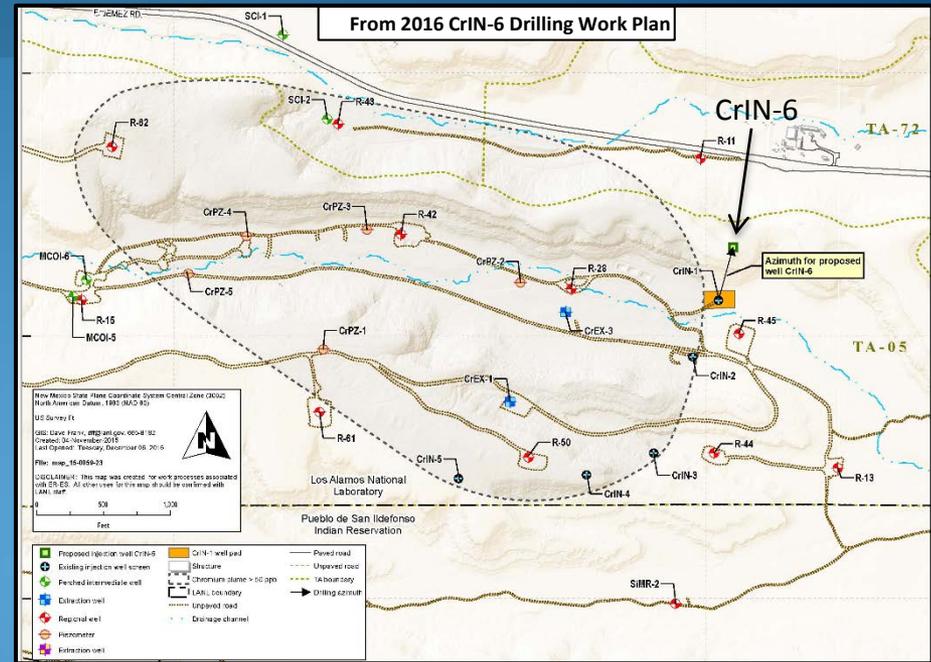
Approach

Utilizes hydraulic capture of plume: combined extraction (CrEXs-1, -2 & -3) – treatment – injection (CrINs-1, -2, -3, -4, -5 & -6)



CrIN-6: What We Have Learned

- Installed injection well CrIN-6 in July 2017
- Concentration of Cr in CrIN-6 is ~270 ppb
 - ❖ Concentrations consistent with model predictions of plume in the CrIN-6 area
- Updated depiction of plume is based on CrIN-6 data and models that were consistent with CrIN-6 Cr concentration. Specific location of 50 ppb edge is uncertain.
- Plume did not suddenly expand
- Consent Order process and Discharge Permits govern evaluation of the new CrIN-6 data
- Continued coordination with Los Alamos County to ensure protection of drinking water (PM-3)

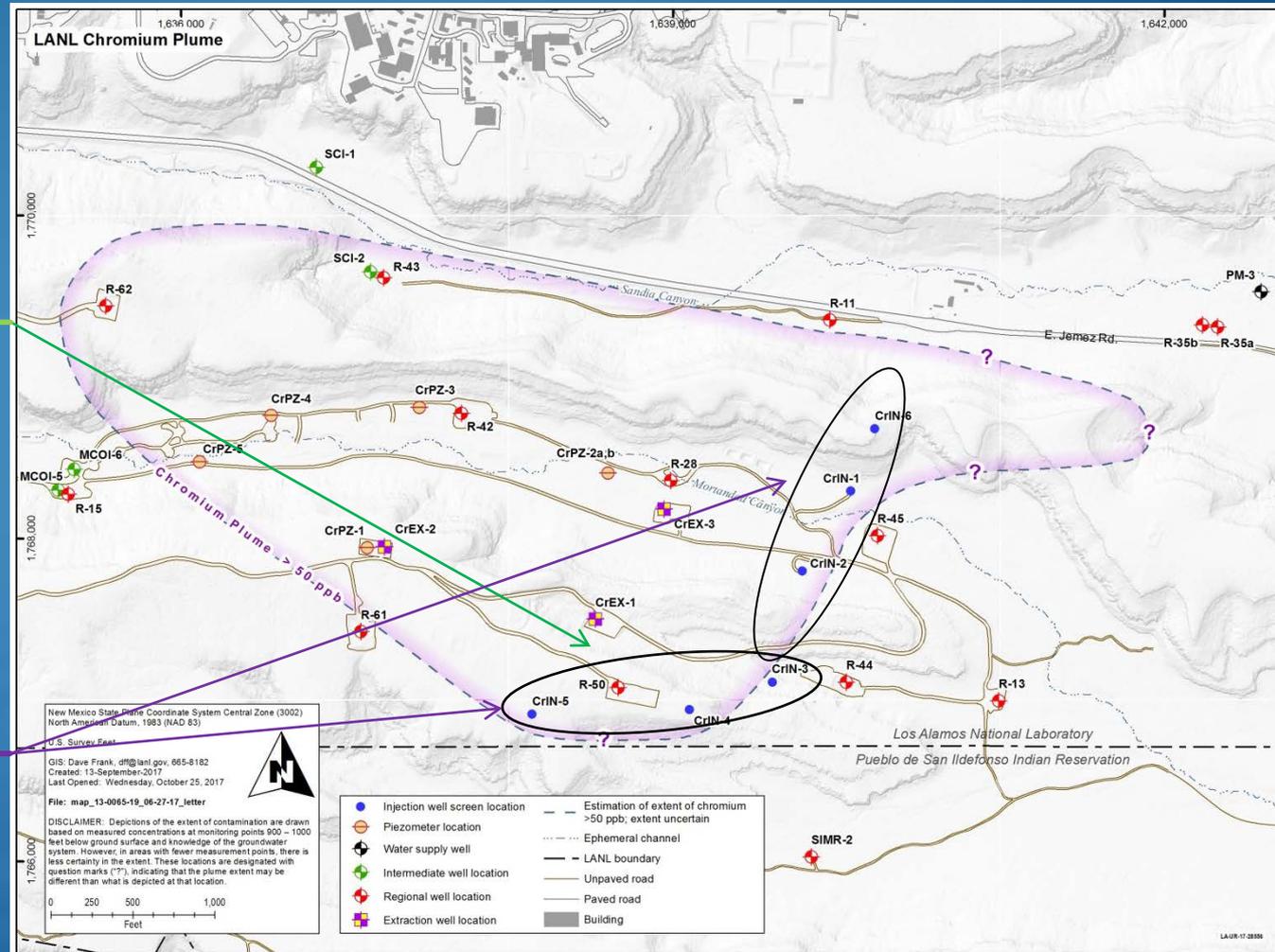


Path Forward

- Evaluation and recommendation for CrIN-6
 - Coordinate with NMED to conduct hydraulic testing (Nov-Dec 2017)
 - Build testing data into the groundwater model (Dec 2017-Jan 2018)
- Use updated model to evaluate Interim Measure operational strategy for managing plume migration in the portion of the plume downgradient of CrIN-6 (Jan – Feb 2018)
- Recommendation Report to NMED March 2018 timeframe

Path Forward - Interim Measure

- ✓ Restart Interim Measure injection along Laboratory boundary with Pueblo de San Ildefonso
- ✓ All 3 extraction wells pumping; injection into CrIN-3, -4, and -5
- ✓ Goal early January 2018
- ✓ Early 2018 decision on full-scale Interim Measure operations to address southern and eastern edges



General Project Timeline

FY18	FY19	FY20	FY21	FY22+
Interim Measure				
Evaluation of Final Remedial Options				
		CME		
		NMED Review/Public Comment		
				Corrective Measures Implementation

A landscape photograph of a sunset or sunrise over a mountain range. The sky is filled with soft, wispy clouds in shades of orange, yellow, and blue. The mountains in the foreground are silhouetted against the bright sky. The word "Questions?" is written in a large, bold, black sans-serif font in the center of the image.

Questions?