

MISSION FLATS SITE 1 ENGINEERED REPOSITORY SITE

AGENDA:

- REPOSITORY SELECTION PROCESS OVERVIEW
- SITE INVESTIGATION/DUE DILIGENCE
- DISCUSSION

John Lawson, DEQ

Cheryl Gussenhoven, TerraGraphics



REPOSITORY SELECTION PROCESS OVERVIEW

- SITE IDENTIFICATION
 - PROPERTY AVAILABILITY DETERMINATION
- SITE SCREENING
- PRELIMINARY INVESTIGATION
 - PFT PRESENTATION
- DESIGN LEVEL INVESTIGATION
 - TLG PRESENTATION

DIFFICULT TO FIND SUITABLE SITES

- **>250 SITES REVIEWED**
- **45,000 CY**
- **6-MI UP CANYON CREEK**
- **300-M NEAREST RESIDENCE**

11/06/2002



BASIN REPOSITORY SITE MATRIX

Site Number	Site Identification	Parcel #	Ownership	Description	Location (UTM Northing/Easting)		Date Identified	Recommended Action	Volume	Proximity (Removal)	Proximity (Residences)	Access	Surface Water	Extent of Contamination
1	MU1	48N06E313750	HECLA MINING COMPANY	Hecla/Lucky Friday Lot	N527960.64	E594435.52	6/12/2002	Further Investigation	Good	Average	Good	Good	Average	Poor
		SNOWSTORM MINE SITE MC-0147 (M.S. 2066B Snowstorm)	CITY OF MULLAN*											
2	MU2	48N05E360900	HECLA MINING COMPANY	Hecla/Lucky Friday Tailings Pond	N5258208.92	E593593.09	6/12/2002	Hold	Good	Average	Average	Good	Poor	Good
3	MU3	48N05E364900	ASARCO, INC.	Vacant Lot	N5257566.70	E593675.67	6/12/2002	Hold	Poor	Average	Average	Good	Good	Poor
		48N05E363700	STATE OF IDAHO											
4	MU4	48N05E306600	STATE OF IDAHO	NITF Site	N5258145.11	E584734.44	6/12/2002	Further Investigation	Good	Average	Good	Good	Poor	Average
		48N05E306000	PF AHL, JOHN CHRIS											
		MC0244 (M.S. 2522 Mary D)	PF AHL, J. CHRIS, ETUX.											
		MC0083 (M.S. 2215 Cove)	GOLCONDA MINING CO.											
5	MU5	48N05E312500	FERRIS LIVING TRUST	Golconda Mine	N5258261.20	E585245.15	6/12/2002	Hold	Poor	Average	Average	Poor	Poor	Good
		48N05E305200	GOLCONDA MINING CORP.											
6	MU6	48N05E348700	ASARCO, INC.	Morning Mine Waste Rock Pile	N5257502.02	E589536.19	6/19/2002	Further Investigation	Good	Average	Good	Good	Good	Good
		EVENING MILLS MC0004 (M.S. 1181 Evening M.S.)	ASARCO (MINERAL) AND HECLA (SURFACE)*											
7	MU7	48N06E311300	HENDRICKSON, ANNA	Open Pasture/ Meadow	N5257779.37	E595380.62	7/30/2002	Eliminated	Good	Poor	Poor	Average	Good	Poor
8	MU8	48N06E311300	HENDRICKSON, ANNA	Open Pasture/ Meadow (S side of Larson Road)	N5257839.21	E595243.90	7/30/2002	Eliminated	Good	Poor	Poor	Average	Good	Poor
9	MU9	48N06E312700	SAYLOR, GREGORY D. & DEBORAH L.	Waste Rock Pile (N side of Road)	N5258068.93	E594697.98	7/30/2002	Further Investigation	Good	Average	Good	Good	Good	Good
		48N06E310600	HECLA MINING COMPANY*											
10	MU10	48N06E313750	HECLA MINING COMPANY*	Waste Rock Pile/Capped Dump (N side of Road)	N5258032.23	E594421.12	7/30/2002	Further Investigation	Good	Average	Good	Good	Good	Good
		48N06E310600	HECLA MINING COMPANY*											
11	MU11	48N05E351800	HECLA MINING COMPANY*	Mill Foundation (Lucky Friday)	N5258054.32	E592379.96	7/30/2002	Further Investigation	Poor	Good	Good	Good	Good	Good
		48N05E350100												
		48N05E350110												
		48N05E350120												
12	MU12	48N05E350125	HECLA MINING COMPANY*	Waste Rock (S side of road across from Lucky Friday Mill)	N5257950.94	E592194.63	7/30/2002	Further Investigation	Good	Good	Good	Good	Average	Good
		48N05E351800	HECLA MINING COMPANY											
		48N05E350100	HECLA MINING COMPANY											
		MC0106 (M.S. 3028 Good Friday)	HECLA MINING CO.*											
13	MU13	48N05E351100	STATE OF IDAHO	Sunshine Tailings Pond (W side of Mullan)	N5257586.00	E590342.50	7/30/2002	Further Investigation	Good	Good	Average	Good	Average	Good
		48N05E341700	STATE OF IDAHO											
		48N05E341450	HECLA MINING CO.*											
14	MU14	A0000341450	HECLA MINING CO.*	Slash Piles in Open Area off of I-90	N5258330.72	E583492.92	6/19/2002	Hold	Poor	Average	Poor	Good	Average	Poor
		48N04E257050	ZANETTI, WILLIAM											
15	CC1	48N04E256725	UNKNOWN	Hercules No. 5	N5263510.69	E588998.28	6/11/2002	Further Investigation	Good	Poor	Poor	Good	Average	Good
		UNKNOWN-GALENA	UNKNOWN											
		MC0132 (M.S. 662 Galena)	CONJECTURE SILVER MINES, INC.											
		MC0105 (M.S. 949 Hecla)	HECLA MINING CO.*											
16	CC2	MC0105 (M.S. 1956 Hecla Fr.)	HECLA MINING CO.*	Contaminated Lot	N5262925.57	E586490.41	6/11/2002	Further Investigation	Good	Poor	Poor	Good	Average	Good
		Galena Addition Block A, B, C & D	VARIOUS											
17	CC3	USPD	USPD	Hecla-Star Tailings Ponds	N5259908.40	E583379.38	6/11/2002	Further Investigation	Good	Good	Average	Good	Average	Good
		48N05E086800	GREAT EASTERN MINING CO.											
		48N04E255225	HECLA MINING COMPANY											
		48N04E245250	HINSZ, CLIFFORD											
		MC0105 (M.S. 2003 Alexandria)	HECLA MINING CO.*											
MC0306 (M.S. 2003 Alexandria)	SIERRA SILVER LEAD MINING % ATLAS MINING CO.													
MC0105 (M.S. 2364 Minnie Healy)	HECLA MINING CO.*													
MC0105 (M.S. 2361 Fraction)	HECLA MINING CO.*													

Why This Site?

Preliminary Screening Criteria (2002 IDEQ Tech Memo)

- Readily accessible,
- Proximity to removal areas,
- Flat expanse to place material
- Available for purchase, and
- Elevated Pb & Zn in soils.

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SITE DUE DILIGENCE

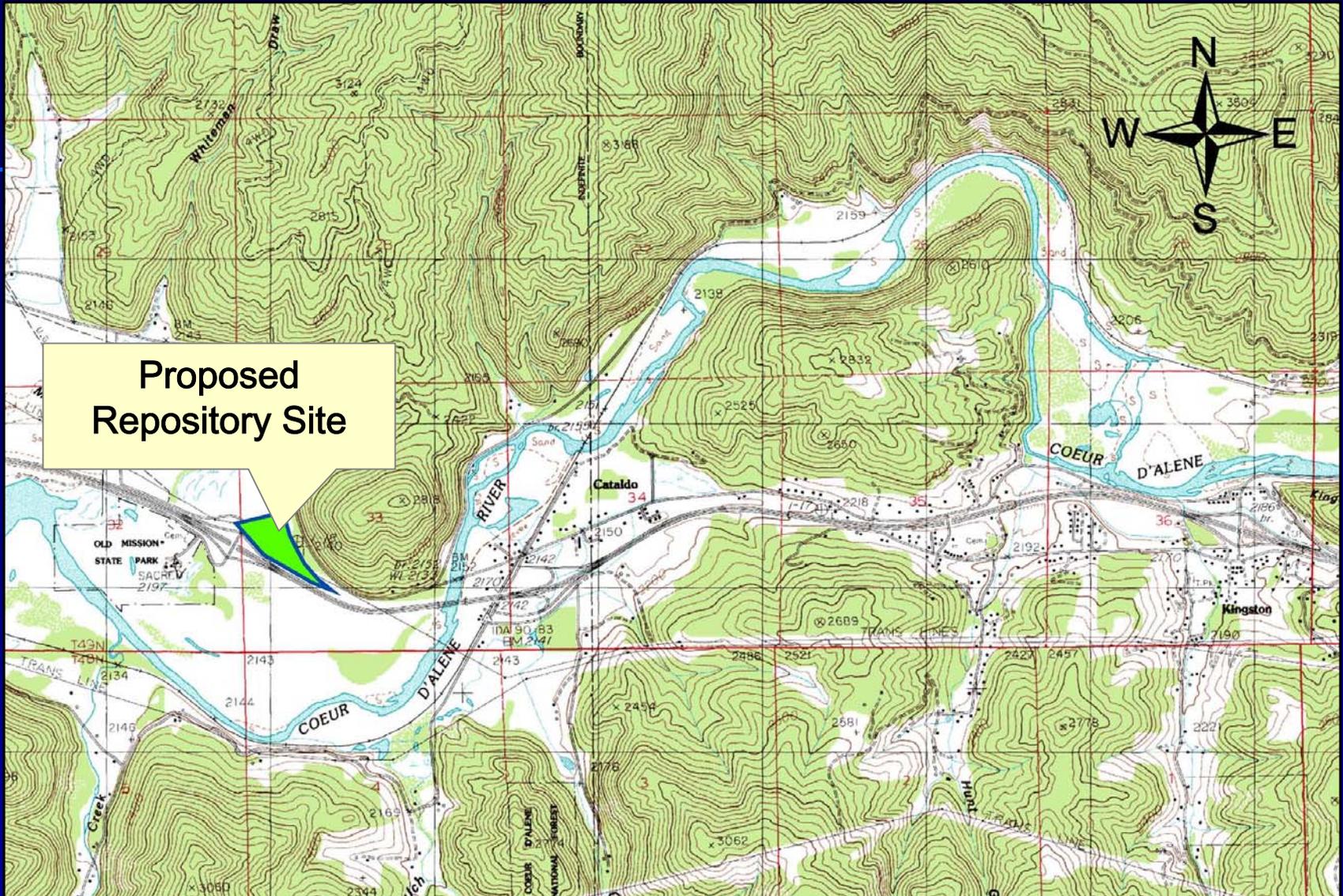
- SAMPLING, WETLANDS
- FEMA/COUNTY FLOODPLAIN ANALYSIS
- PFT, TLG, TRIBE, AGENCY & COMMUNITY INVOLVEMENT

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SITE LOCATION



VIEW FROM EXIT 39



SITE INVESTIGATION & DUE DILIGENCE:

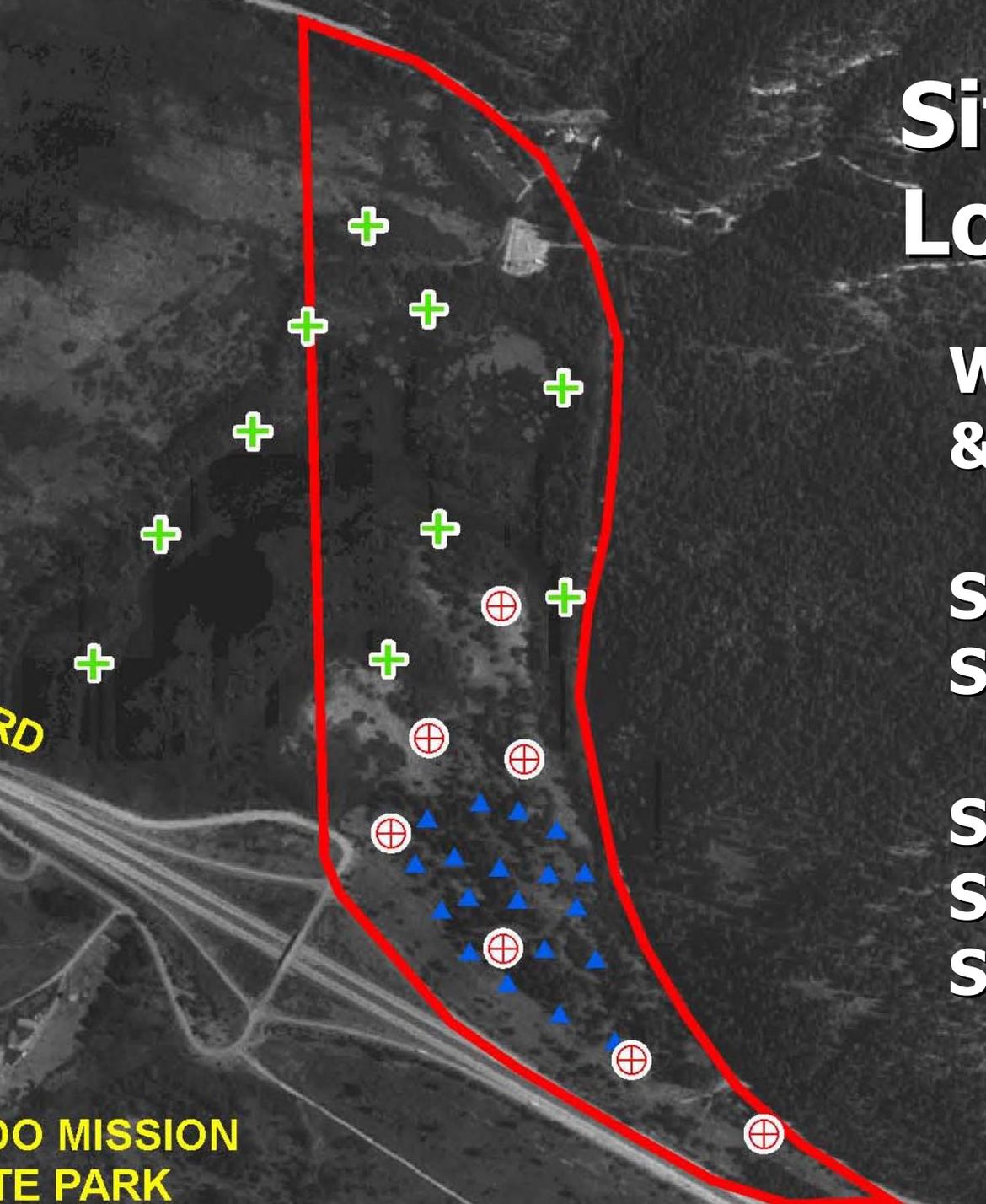
- **GROUNDWATER (7 WELLS),
SOIL, & SURFACE WATER
SEDIMENT SAMPLING**
- **WETLANDS DELINEATION**
- **ENGINEERING DESIGN
PARAMETERS**

Site Sample Locations

**WELL INSTALLATION
& GW SAMPLING**

**SUBSURFACE SOIL
SAMPLING**

**SURFACE WATER &
SEDIMENT
SAMPLING**



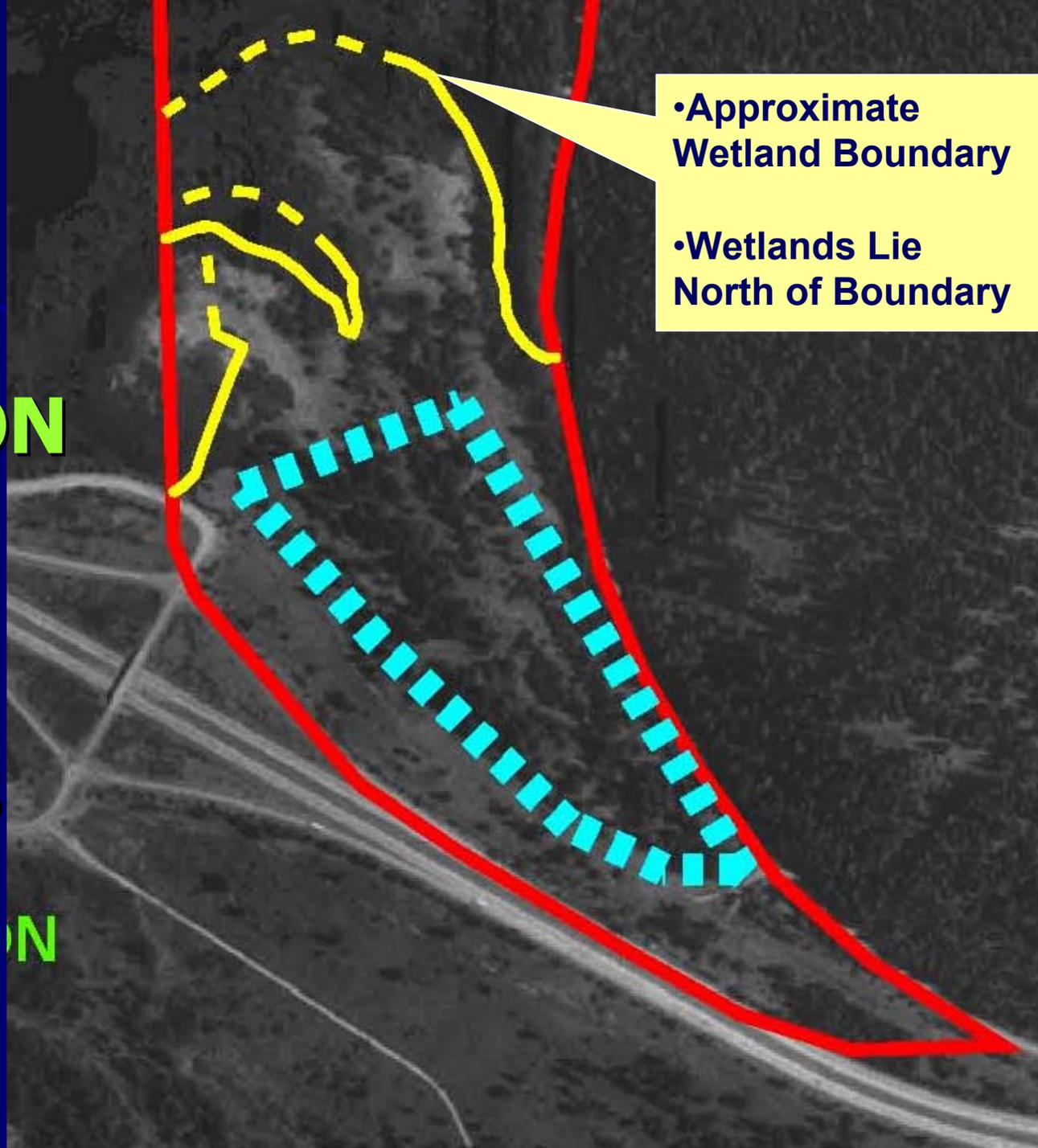
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MISSION
STATE PARK

RESULTS OF INVESTIGATION & DUE DILIGENCE

- **SOIL HAS ELEVATED LEAD & ZINC**
 - UPPER 48" (2000 TO 7000 MG/KG)
- **GROUNDWATER HAD SINGLE MCL EXCEEDANCE (CADMIUM)**
- **WETLANDS ARE NORTH OF SITE & OUTSIDE REPOSITORY FOOTPRINT**

**WETLAND
DELINEATION**
-U.S. Army
COE 404
PERMIT
STANDARDS



- Approximate Wetland Boundary
- Wetlands Lie North of Boundary

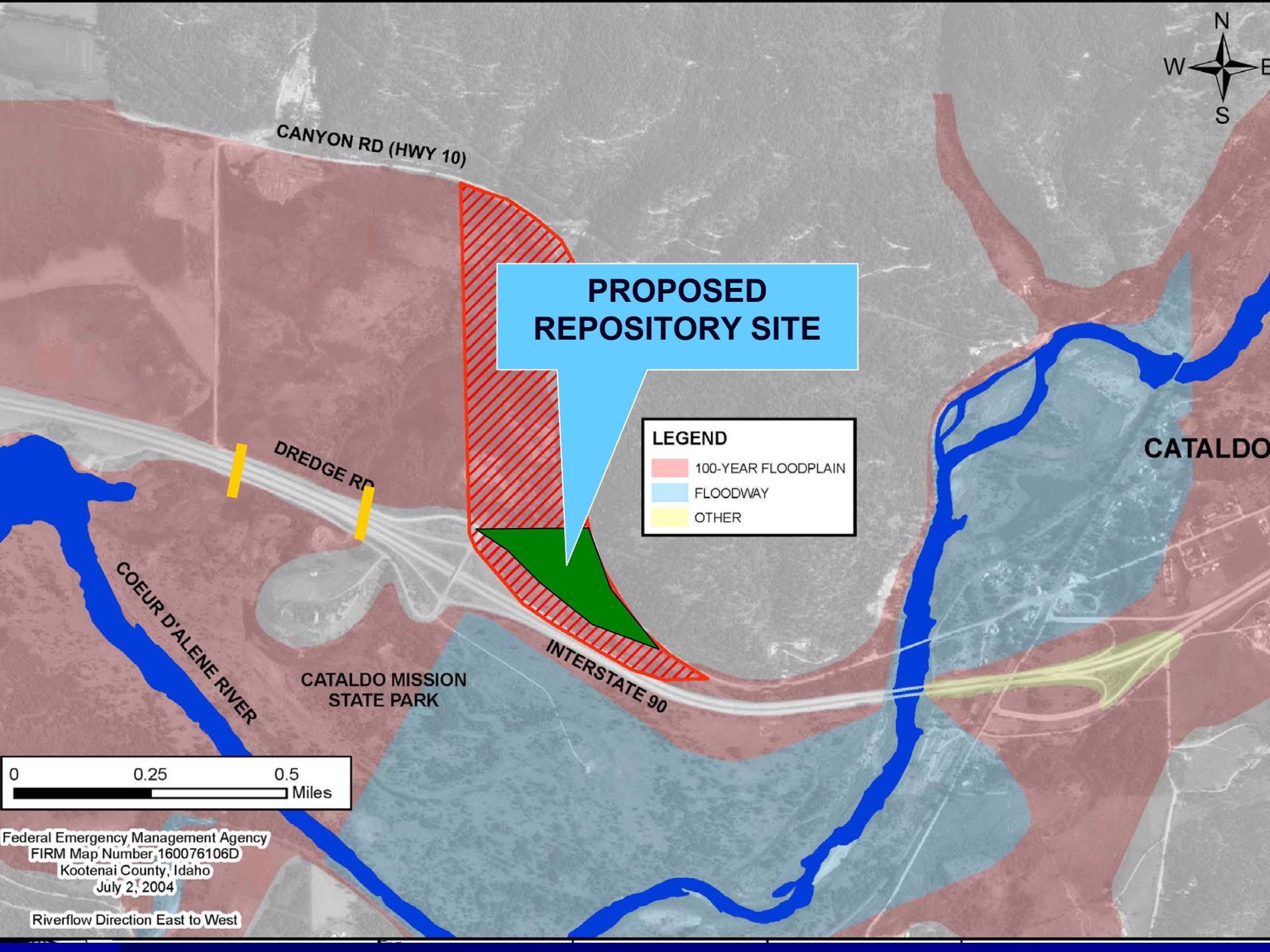
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SITE INVESTIGATION & DUE DILIGENCE (cont.):

- **PFT & TLG PRESENTATIONS/INPUT**
- **COEUR D'ALENE TRIBE, COUNTY & COMMUNITY INVOLVEMENT -
Meetings, pamphlets, and discussions**
- **COMPLIANCE W/ FEMA & COUNTY FLOOD ORDINANCE**

Compliance With FEMA & County Regulations:

- FEMA – ENFORCES NFIP
- KOOTENAI COUNTY FLOOD DAMAGE PREVENTION ORDINANCE NO. 311 (as amended by Ordinance 333) –



**PROPOSED
REPOSITORY SITE**

LEGEND

- 100-YEAR FLOODPLAIN
- FLOODWAY
- OTHER



Federal Emergency Management Agency
FIRM Map Number 160076106D
Kootenai County, Idaho
July 2, 2004

Riverflow Direction East to West

KOOTENAI COUNTY ORDINANCE (311/333)

- **FLOODWAY:** Development **can** occur but **cannot** raise flood elevation > 1 ft; must fulfill construction materials & practice standards per ordinance.
 - **ADDRESSED:** Fill Area is **NOT** in the Floodway

KOOTENAI COUNTY ORDINANCE

- **NO NET INCREASE/RISE:** Construction does not cause a net rise of 1 foot in water surface elevation; only applicable when constructing in floodway.
 - **ADDRESSED:** Due Diligence Review of U.S. Army COE model indicates that filling this area will not impact the “no net rise” of the 100-year water surface profile.

KOOTENAI COUNTY

ORDINANCE (311/333)

- **FLOOD STORAGE CAPACITY:** Must ensure no decrease in storage capacity during flood discharge; applies if the project causes a raise in flood surface elevation of more than 1 ft.
- **ADDRESSED:** Repository Site is NOT in the Floodway & fill does not raise the flood surface elevation more than 1-ft.

ENGINEERED REPOSITORY

- Design Stable Slopes & Prevent Slope Failure
- Manage Waste Placement to Prevent Erosion & Provide Stable Repository
- Provide Surface Water Conveyance
- Minimize Infiltration

NEXT STEP

- Property Purchase
- Conceptual Design
- Construction