CFAC Project Update

Presented by CFAC / Roux
October 17, 2018

ROUX

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Presentation Overview

- RI/FS Recent and Upcoming Tasks
- RI/FS Status Update
- Recap RI/FS Phase II Site Characterization Objectives
- RI/FS Phase I and Phase II Sample Locations
- RI/FS Phase II Preliminary Data
- Risk Assessment Update
- Schedule

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Complete?	Remedial Investigation/Feasibility Study Recent and Upcoming Task Schedule
✓	Draft Phase I Site Characterization Data Summary Report
✓	Draft Screening Level Ecological Risk Assessment Report
✓	2017 Field Activities – Slug Testing and Asbestos Landfill Soil Sampling
✓	Final Phase I Site Characterization Data Summary Report
✓	Final Screening Level Ecological Risk Assessment Report
✓	Groundwater and Surface Water Data Summary Report
✓	Draft Baseline Human Health Risk Assessment Work Plan
✓	Draft Baseline Ecological Risk Assessment Work Plan
✓	Draft Phase II Sampling and Analysis Plan
	Phase II Remedial Investigation Field Program
	Draft Phase II Site Characterization Data Summary Report
	Draft Baseline Risk Assessments
	Final Baseline Risk Assessments
	Feasibility Study Work Plan
	Feasibility Study Report Submitted to EPA

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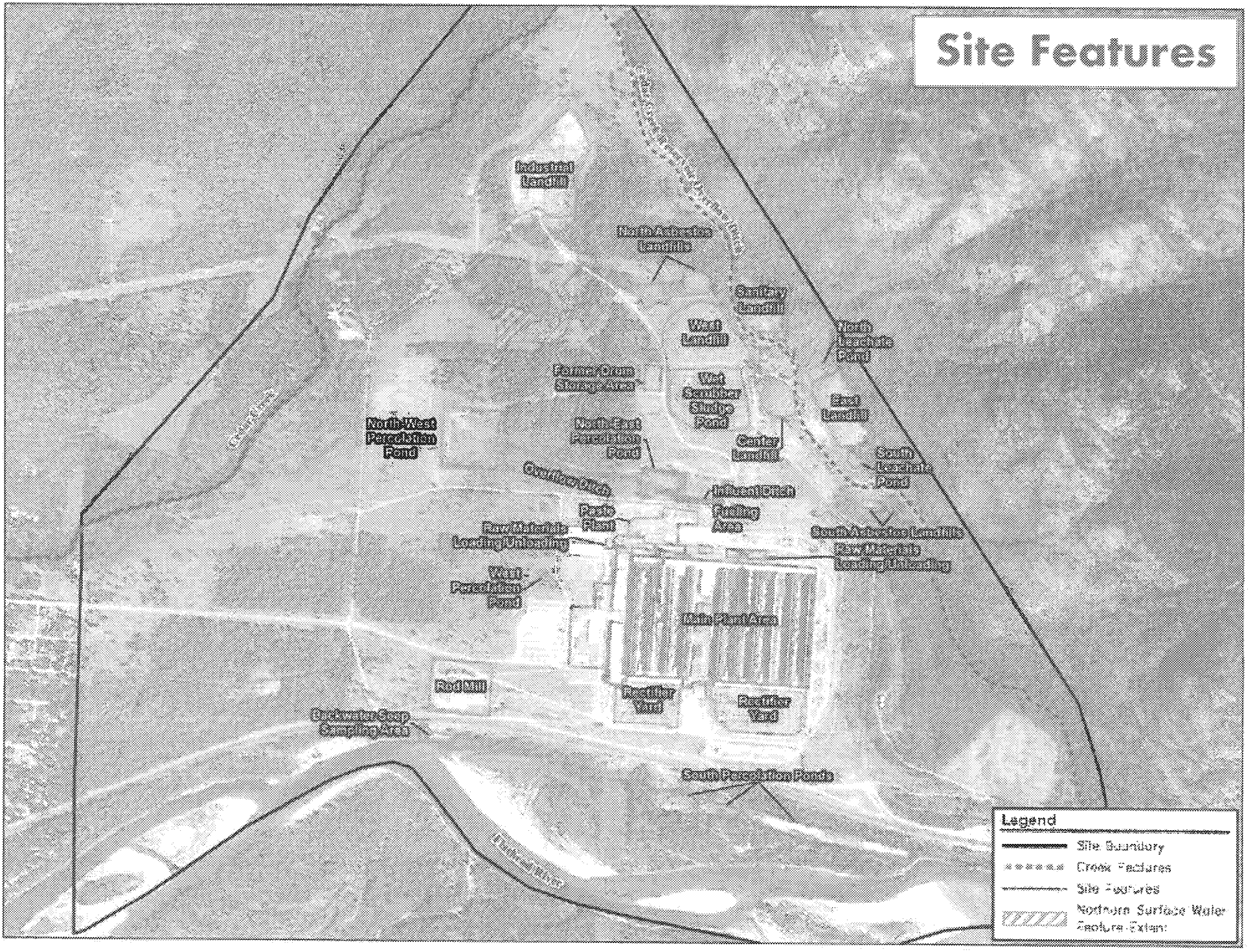
Site Features



RI/FS Status Update: 2018 and Early 2019

May 2018 – November 2018

- Finalize Phase II Sampling and Analysis Plan based on comments from USEPA and MDEQ
- Finalize Background Study Sampling and Analysis Plan based on comments from USEPA and MDEQ
- Implement Phase II Site Characterization field work
- Finalize Baseline Ecological and Human Health Risk Assessment Work Plans based on comments from USEPA and MDEQ
- Prepare interim Risk Assessment deliverables

November 2018 – March 2019

- Draft Phase II Site Characterization Data Summary Report
- Draft Baseline Ecological and Human Health Risk Assessments

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Recap Phase II
Site Characterization Objectives

- Collect additional data required for completion of the Baseline Risk Assessment
- Evaluate areas that were not investigated during the Phase I Site Characterization, were identified as a data gap during the Phase I Site Characterization, or were discussed with EPA
- Collect additional soil, sediment, and surface water samples from offsite locations to characterize background constituents of potential concern (COPC) concentrations representative of regional conditions
- Collect additional data to support the completion of the Feasibility Study

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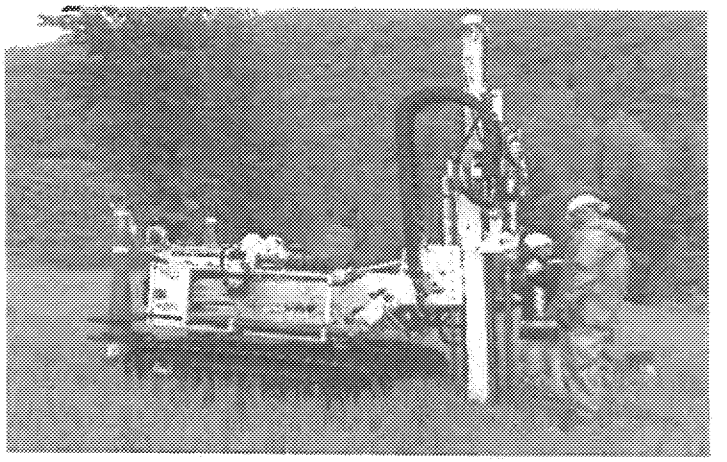
Phase II Site Characterization Field Scope of Work

- Completion of 191 additional soil borings onsite with a combination of hand tools, Geoprobe, and Sonic drilling technologies
- Installation of 8 additional new monitoring wells
- Collection of additional environmental samples:
  - Soil Samples - 484
  - Sediment Samples - 52
  - Sediment Porewater Samples - 50
  - Groundwater Samples - 154
  - Surface water Samples – 120
- Completion of background study:
  - Offsite Soil Samples – 40
  - Offsite Sediment Samples - 20
  - Offsite Surface water Samples – 40



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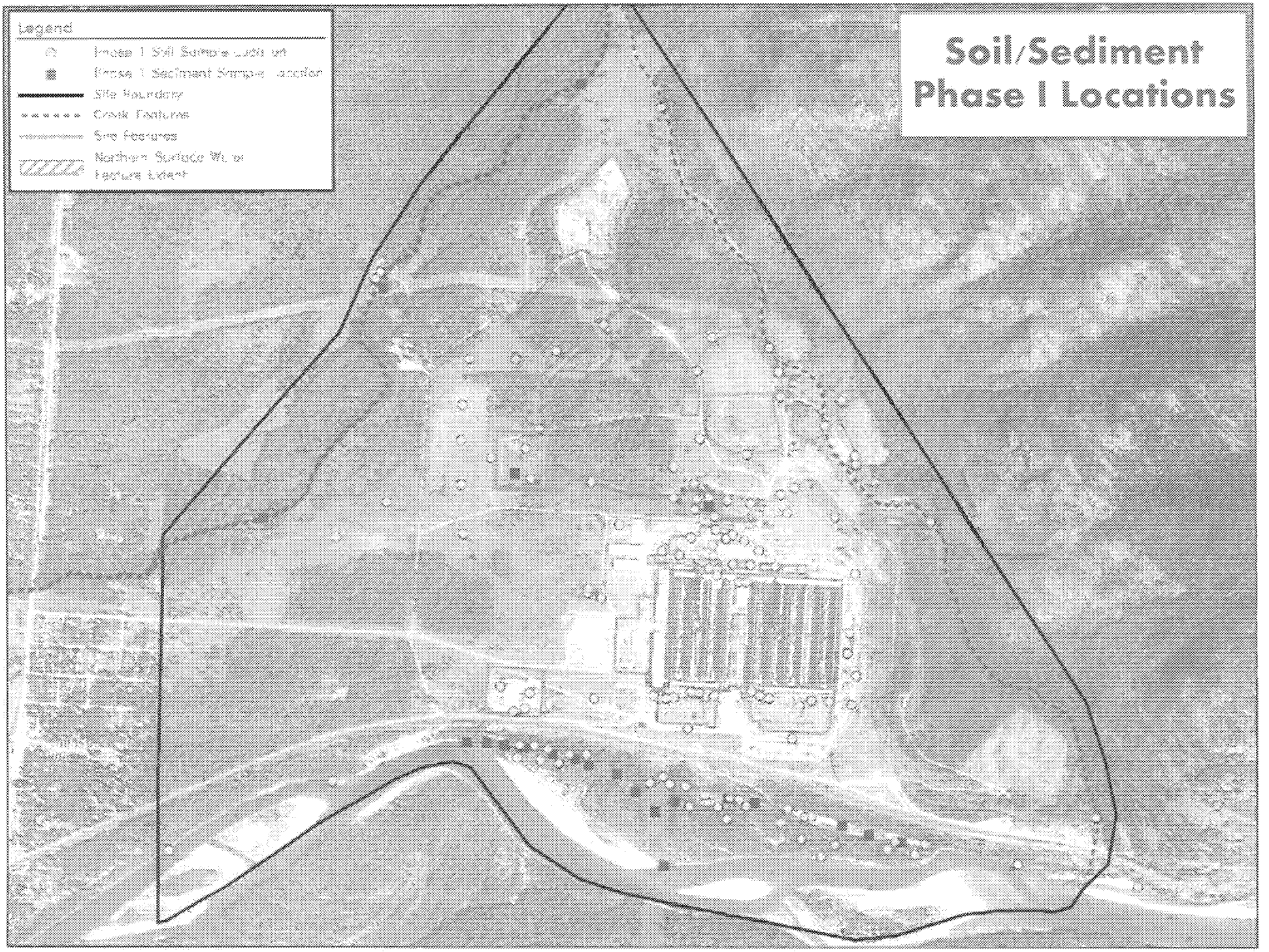

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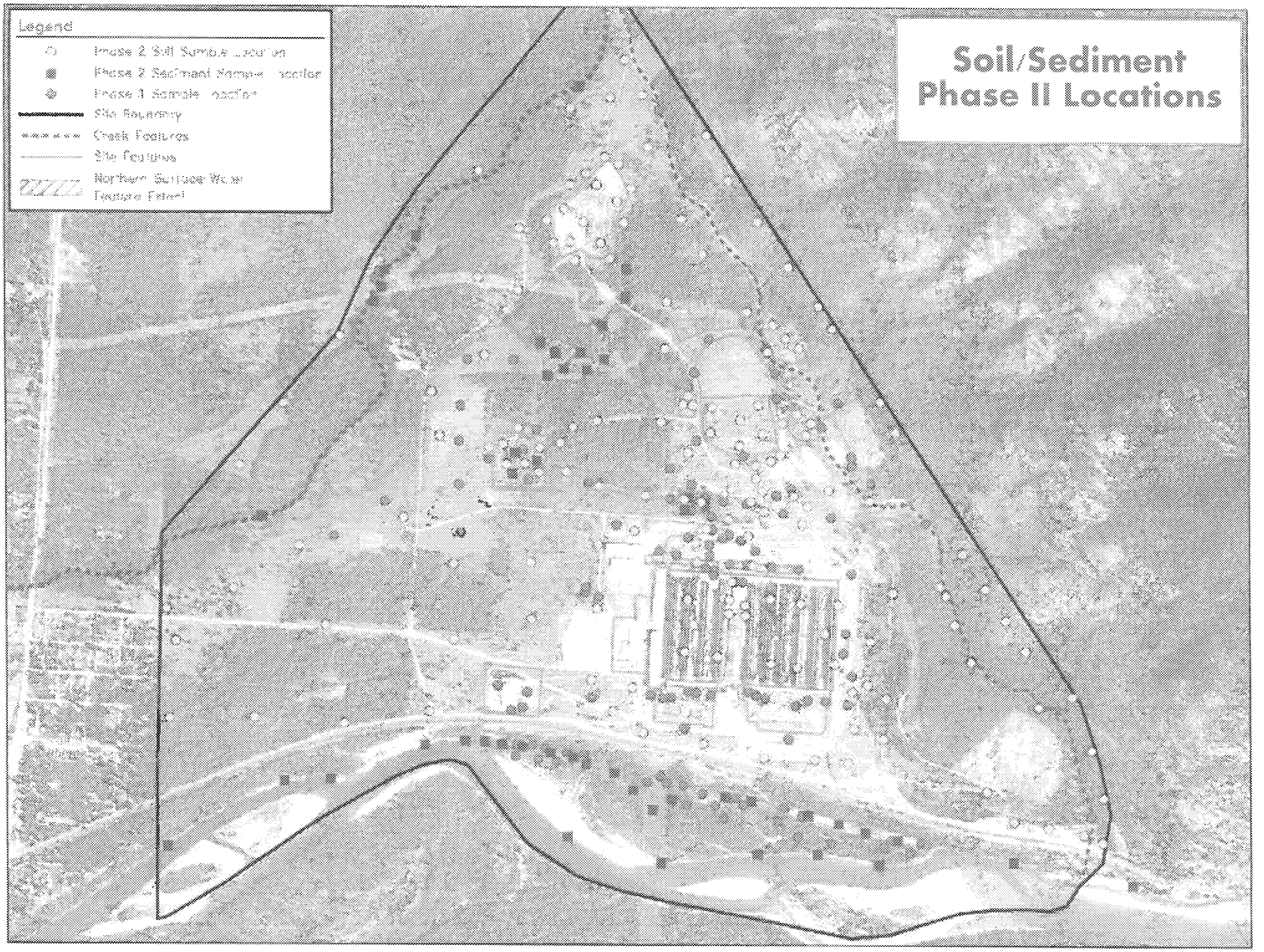

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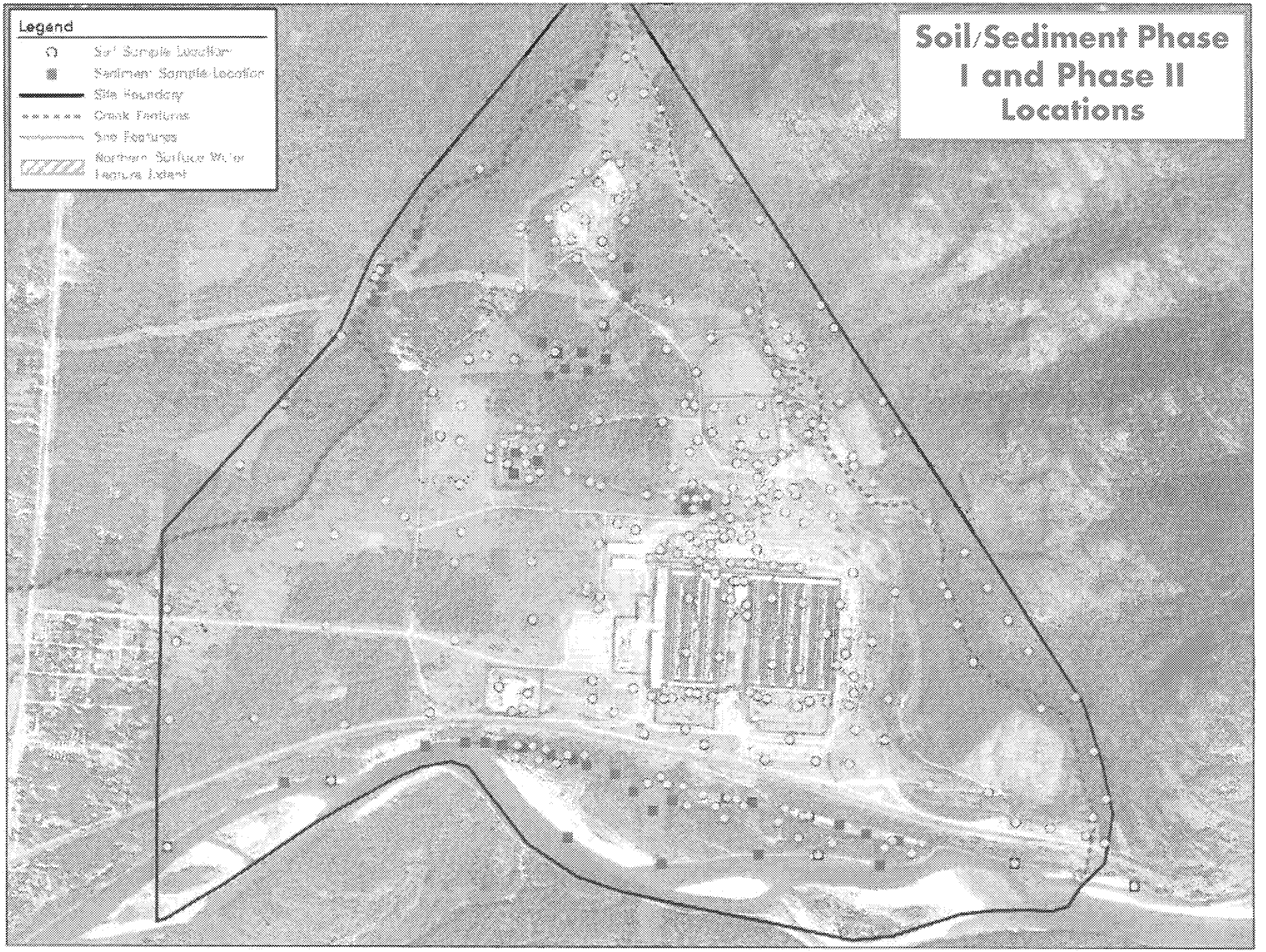

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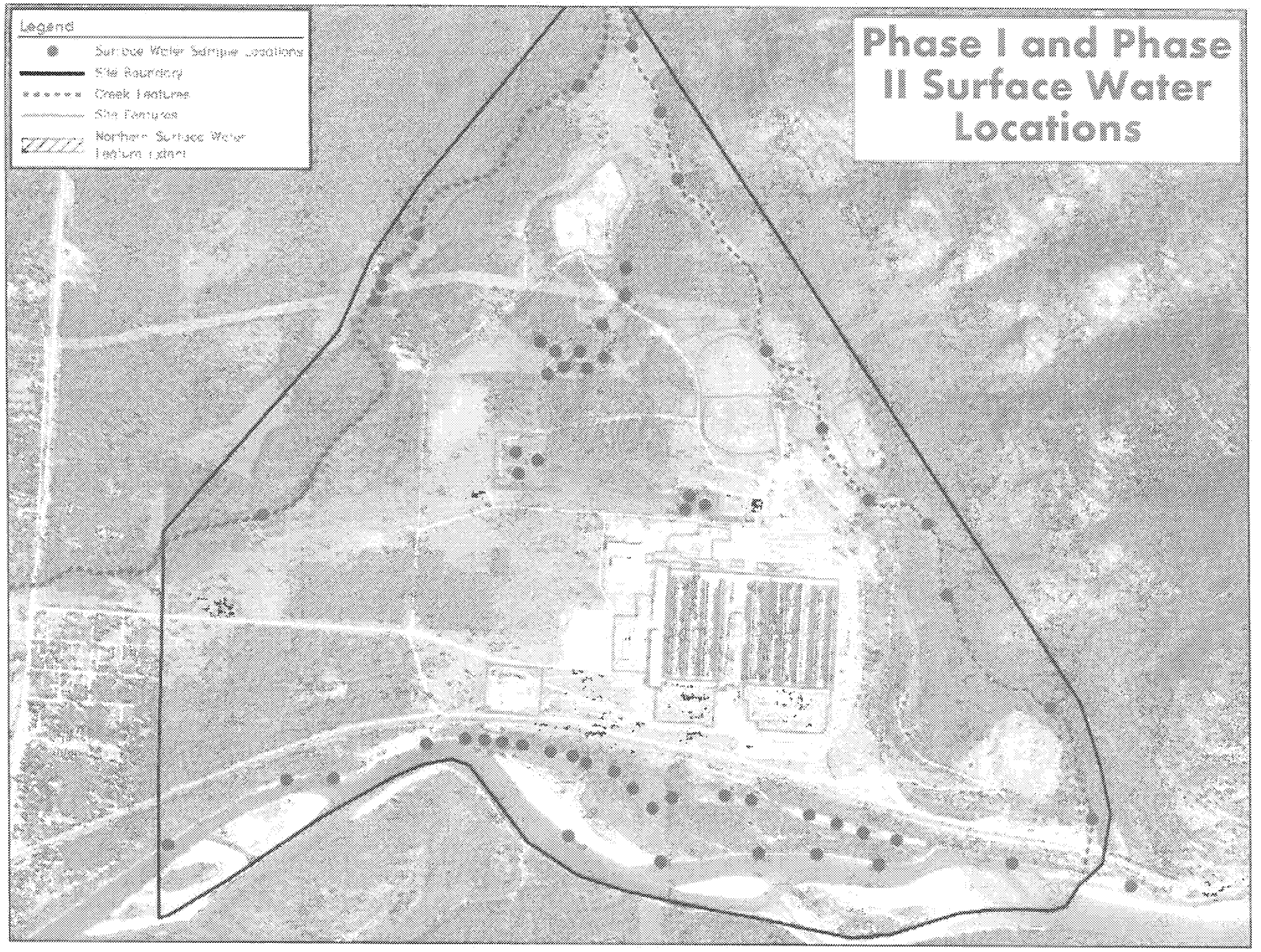

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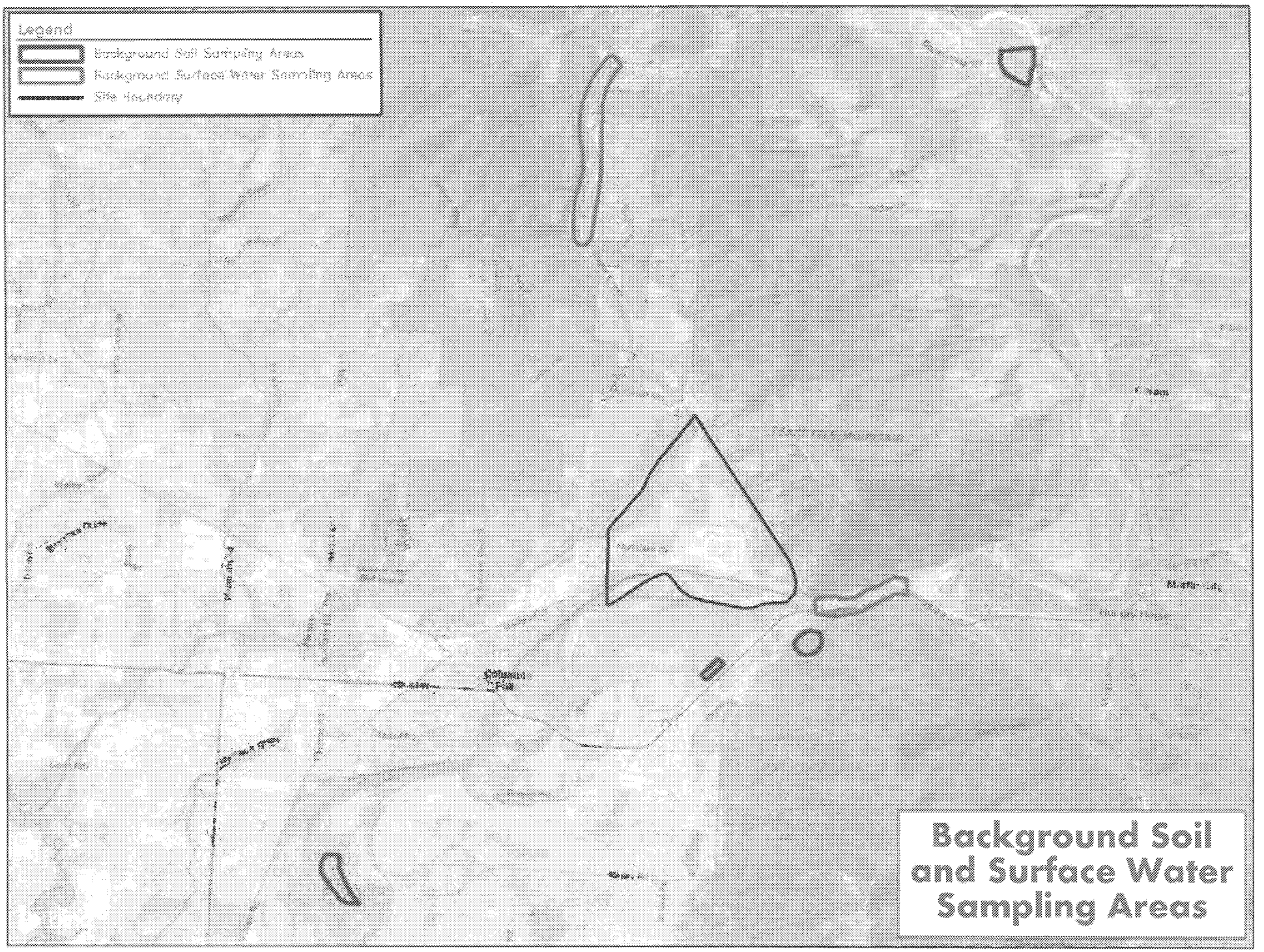

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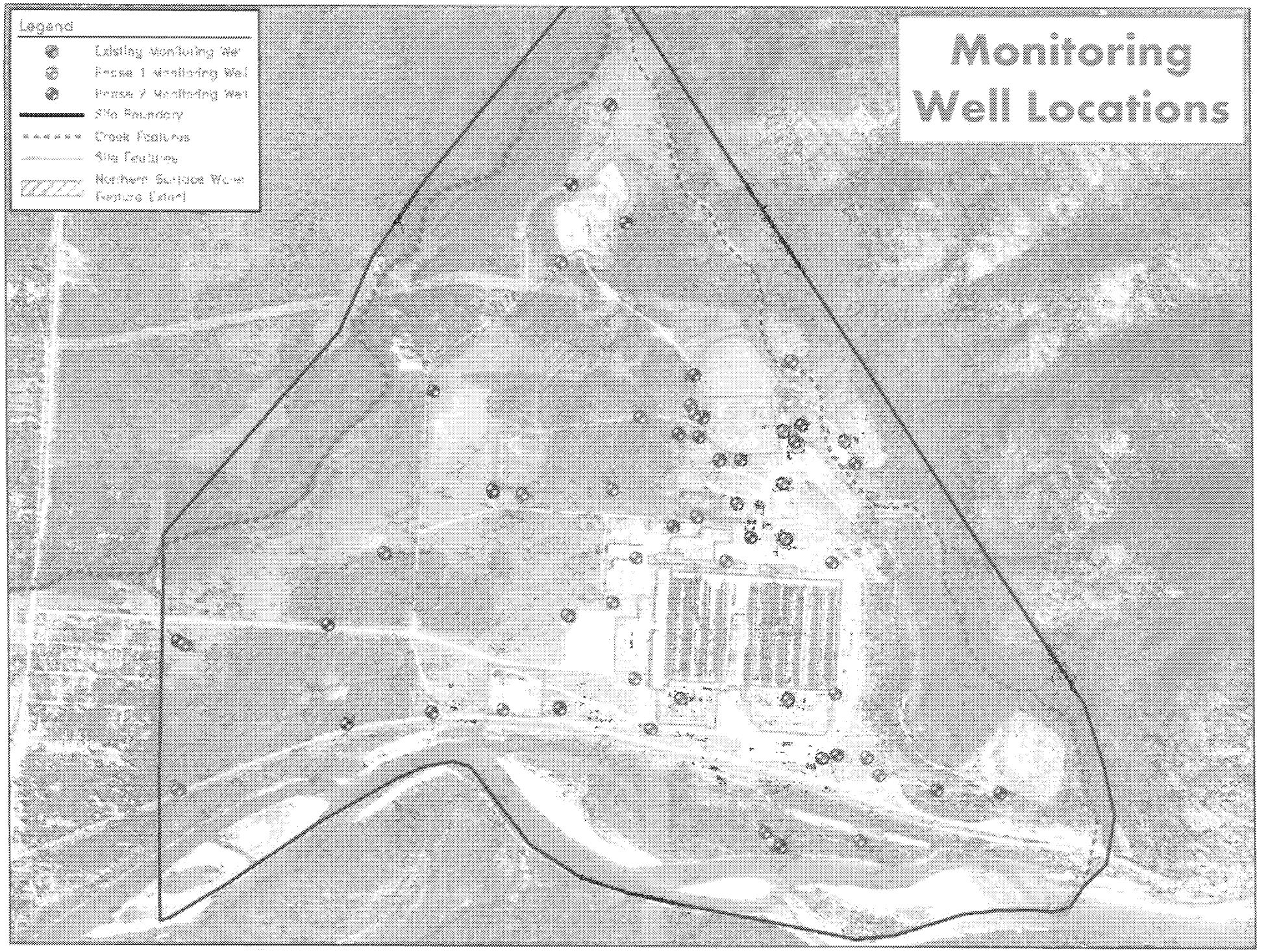

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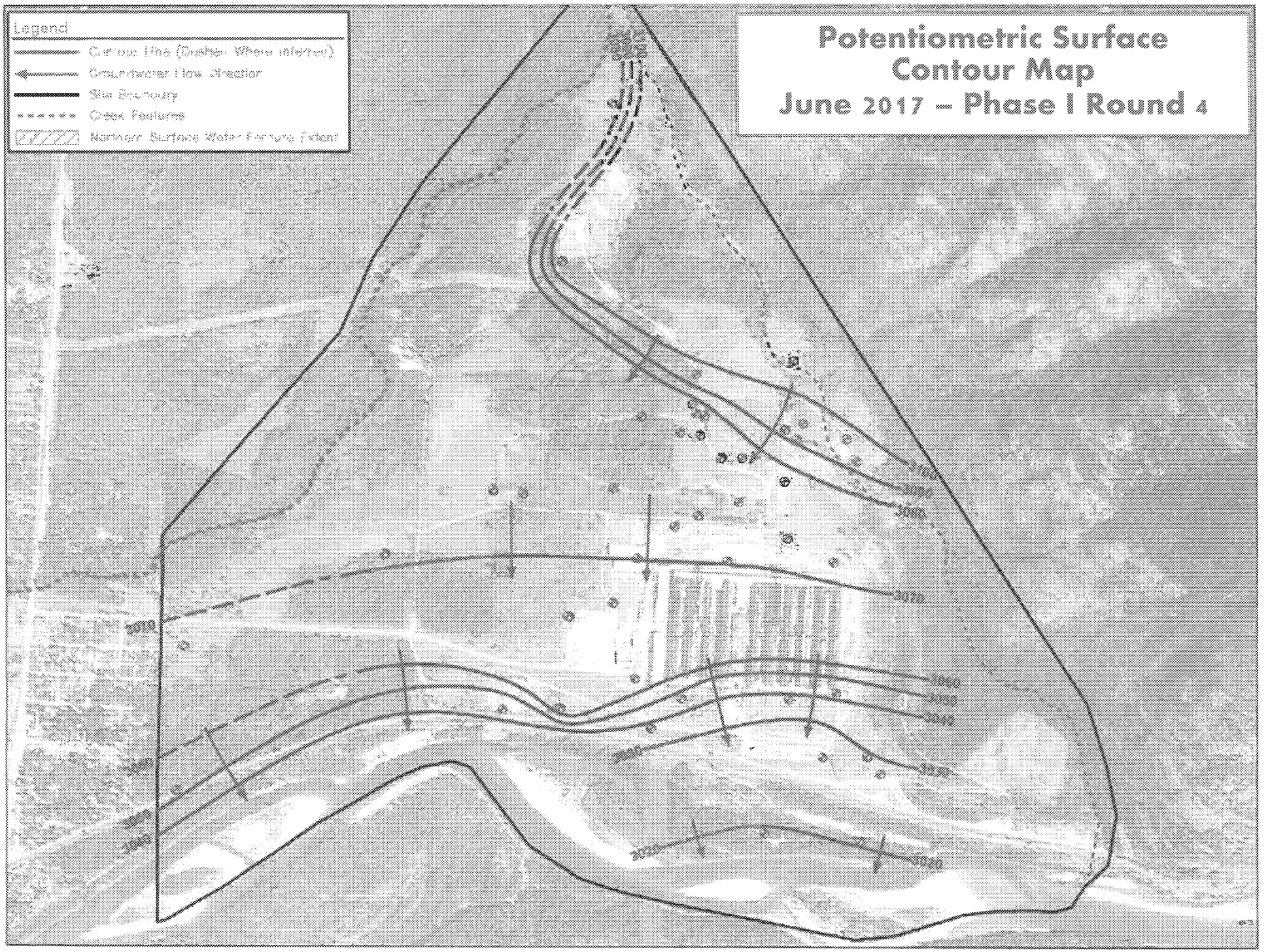
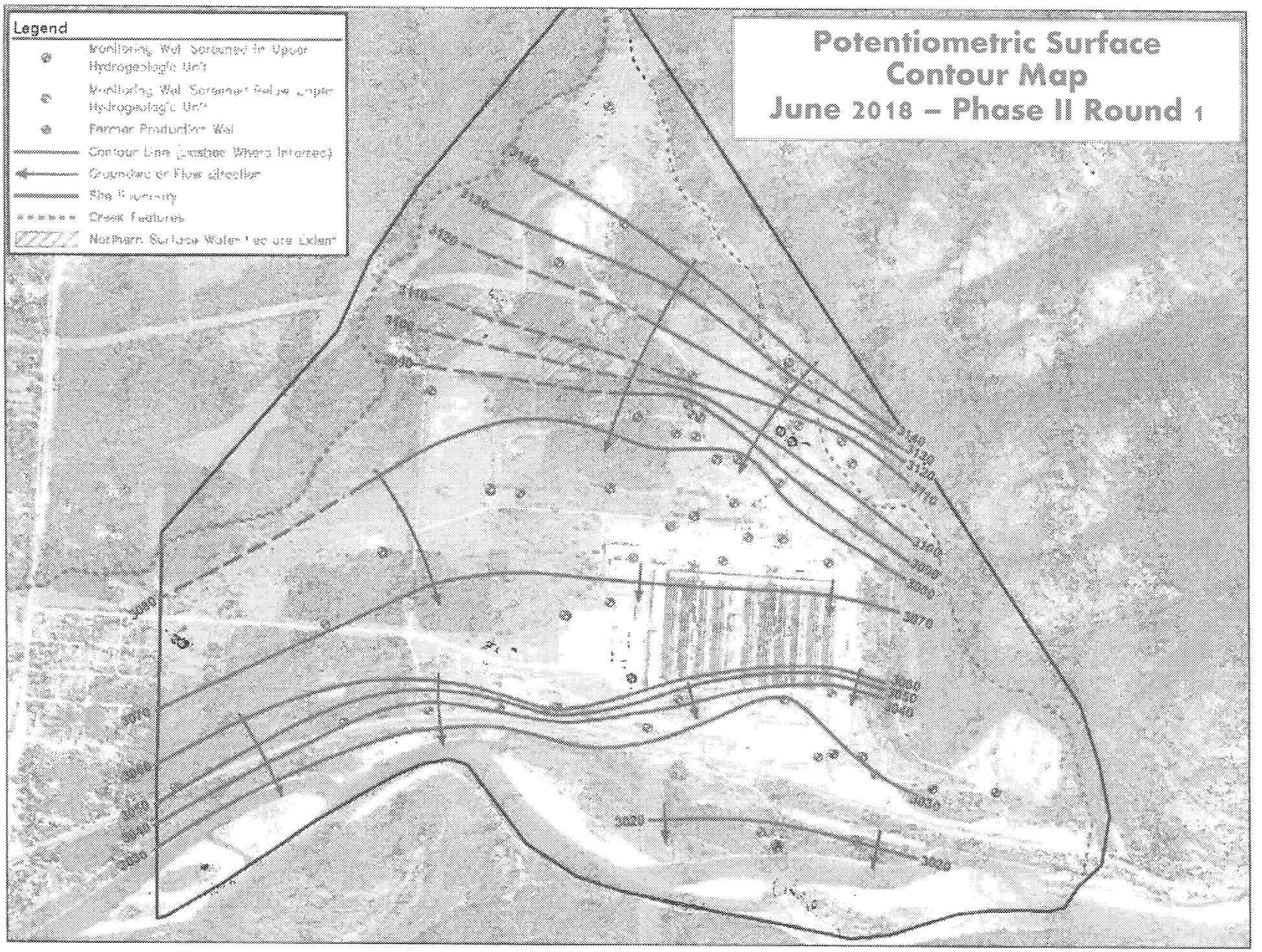

Potentiometric Surface
Contour Map
June 2017 – Phase I Round 4
Legend
Contour Line (Dashed Where Inferred)
Groundwater Flow Direction
Site Boundary
Creek Features
Northern Surface Water Feature Extent
3100
3090
3080
3070
3060
3050
3040
3030
3020
3010
3000
2990
2980
2970
2960



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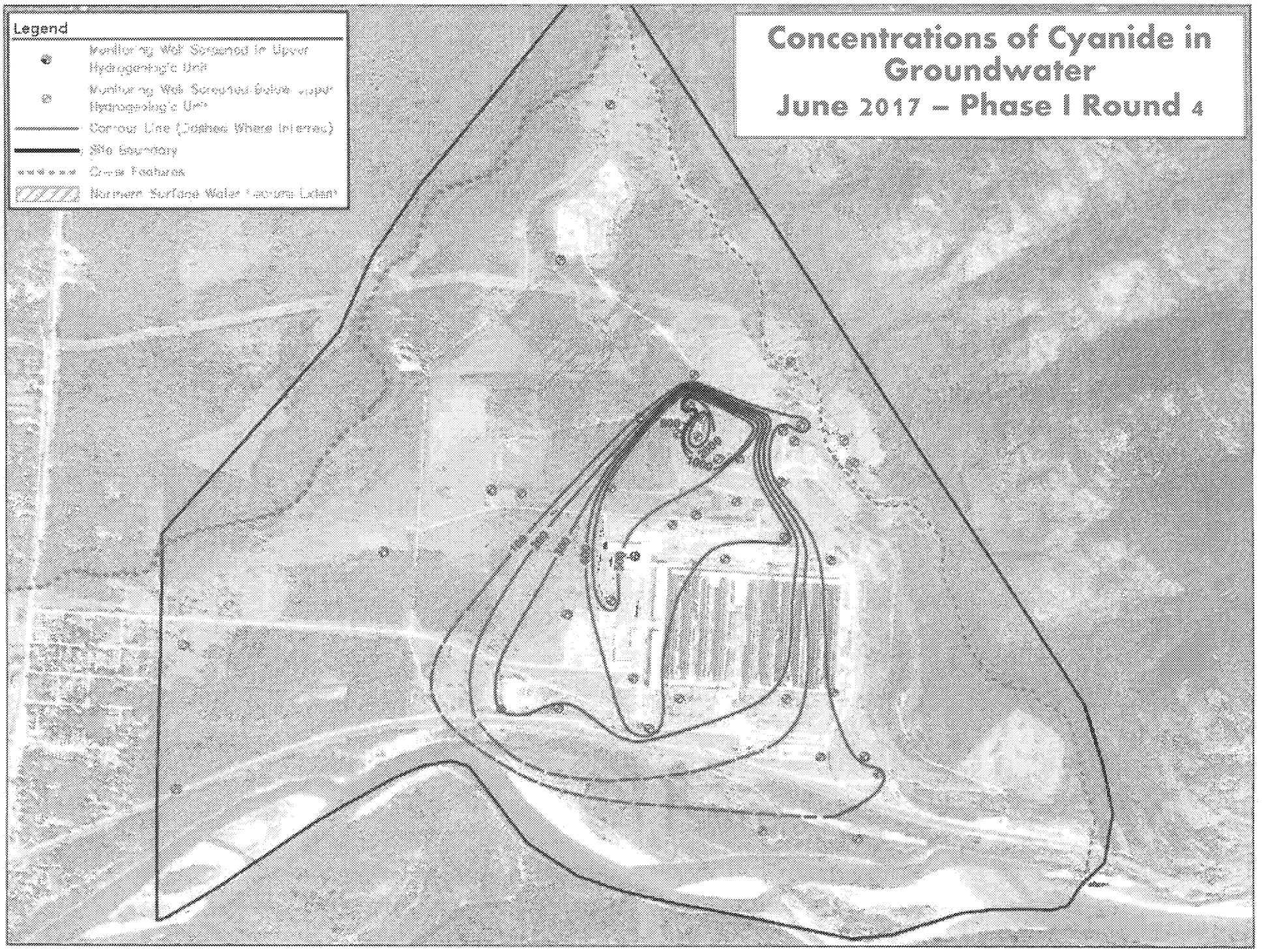

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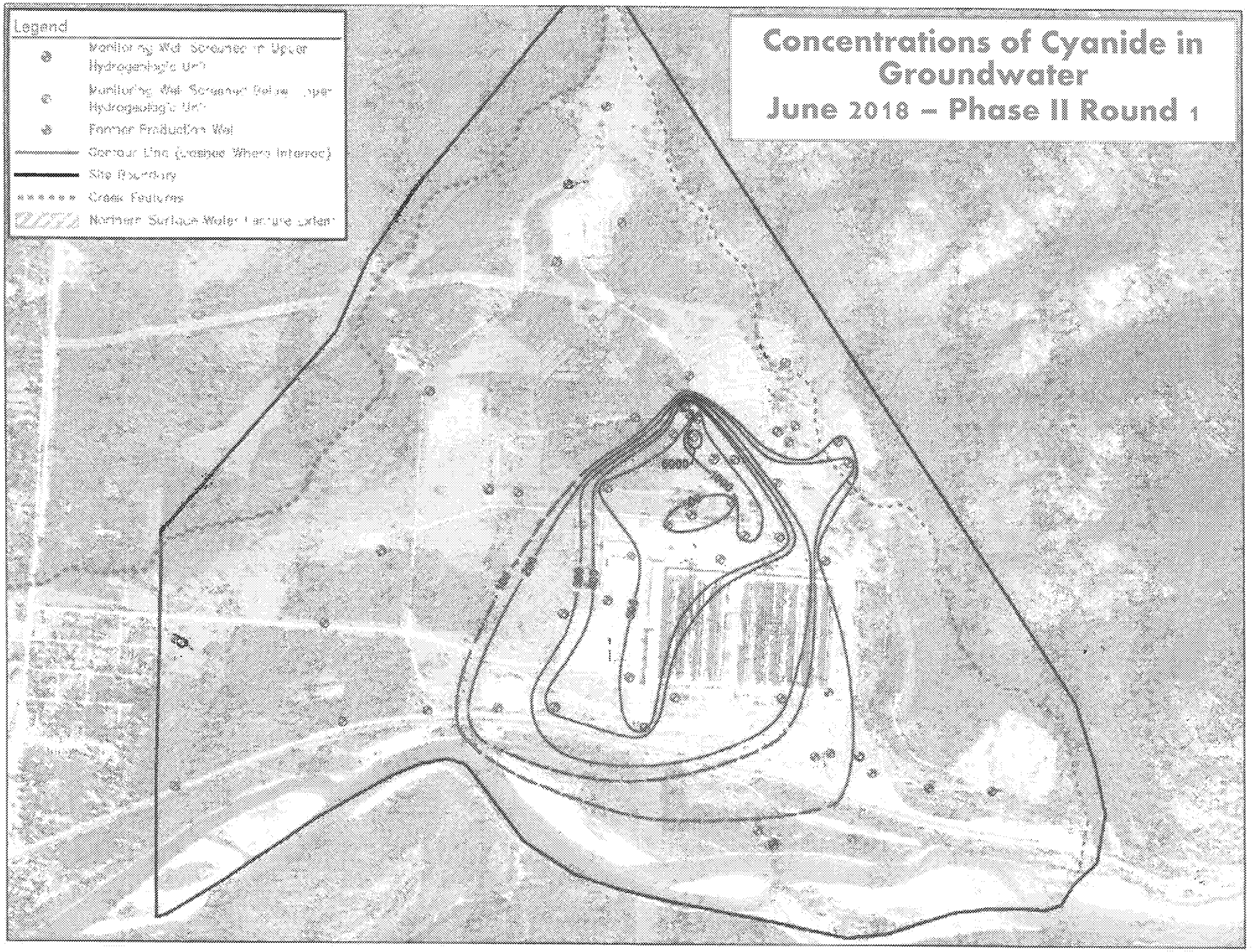

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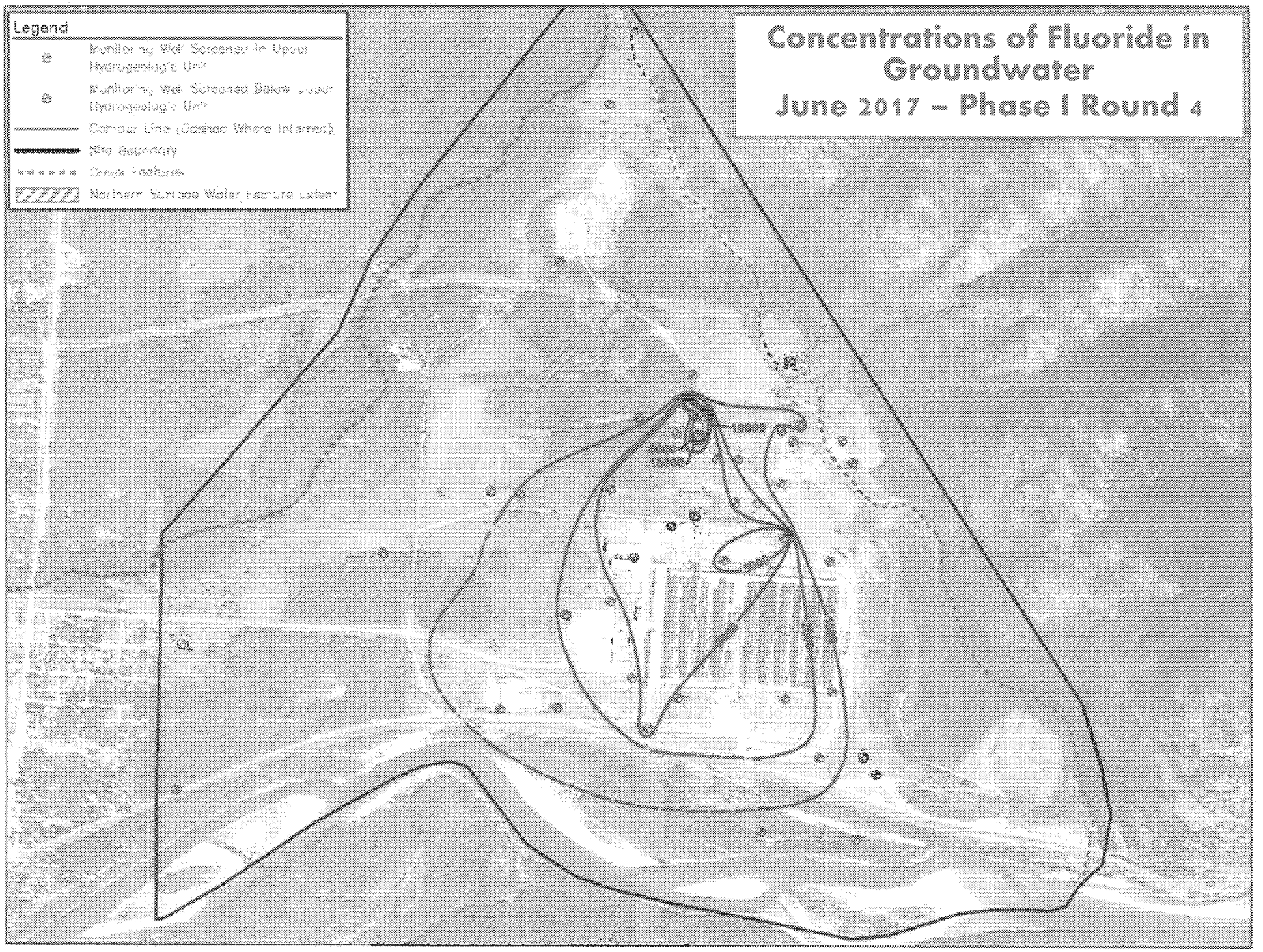
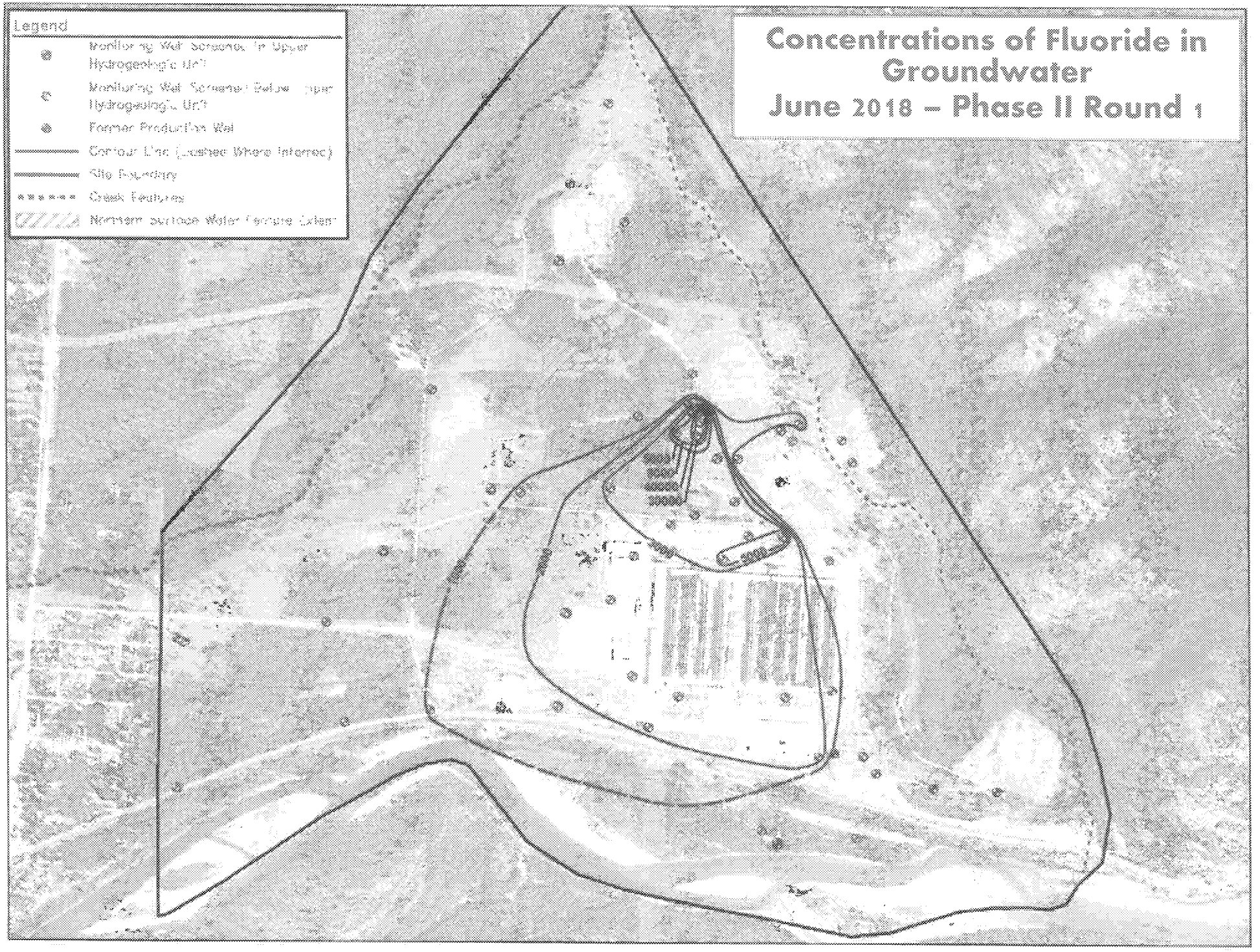

Concentrations of Fluoride in Groundwater
June 2017 – Phase I Round 4
Legend
Monitoring Well Screened in Upper Hydrogeologic Unit
Monitoring Well Screened Below Upper Hydrogeologic Unit
Contour Line (Dashed Where Inferred)
Site Boundary
Creek Feature
Northern Surface Water Feature Extent



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Risk Assessment

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About EHS Support

- Environmental, health, and safety consulting firm
- Headquartered in Pittsburgh, PA
- Over 110 scientists and engineers in 28 states and internationally
- Experienced in human health and ecological risk assessment under Superfund
- www.ehs-support.com

EHS Support

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Human Health & Ecological Risk Assessment

EHS Support

GARY LONG

Education:
- M.S., Biology, George Mason University, 2001
- B.A., Environmental & Evolutionary Biology, Dartmouth College, 1997

Experience:
- EHS Support (April 2015 – Present)
- URS Corporation/AECOM (January 2002 – April 2015)
- 16 years of Superfund experience

Focus Areas:
- Ecological Risk Assessment
- Contaminated Sediment Assessment
- Risk-Based Remedial Decision-Making
- Natural Resource Damage Assessment

TOM BIKSEY

Education:
- BA, Biology, Washington and Jefferson College, 1977
- MS, Marine Biology, California State University at Long Beach, 1987
- MPH, Environmental Occupational Health, University of Pittsburgh, 2007

Experience:
- EHS Support – Feb 2011 to present
- WSP Environment & Energy – Aug 1999 to Feb 2011
- Prior to 1999 – Baker Environmental, Inc; Tetra Tech, Inc; Chesapeake Biological Laboratory; Cove Laboratory; Battelle New England Marine Research Laboratory; Reish Marine Studies

Focus Areas:
- Human Health and Ecological Risk Assessment

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Baseline Risk Assessment

- Addresses human health and ecological receptors
- Evaluates risk to receptors (humans or organism) assuming no remedial action
- Objective:
  - Characterize the potential risks to support the Feasibility Study (FS) in the evaluation of remedial alternatives to prevent, mitigate, or otherwise respond to (control) any unacceptable current or future risk from exposure to constituents of potential concern (COPCs) by human and ecological receptors

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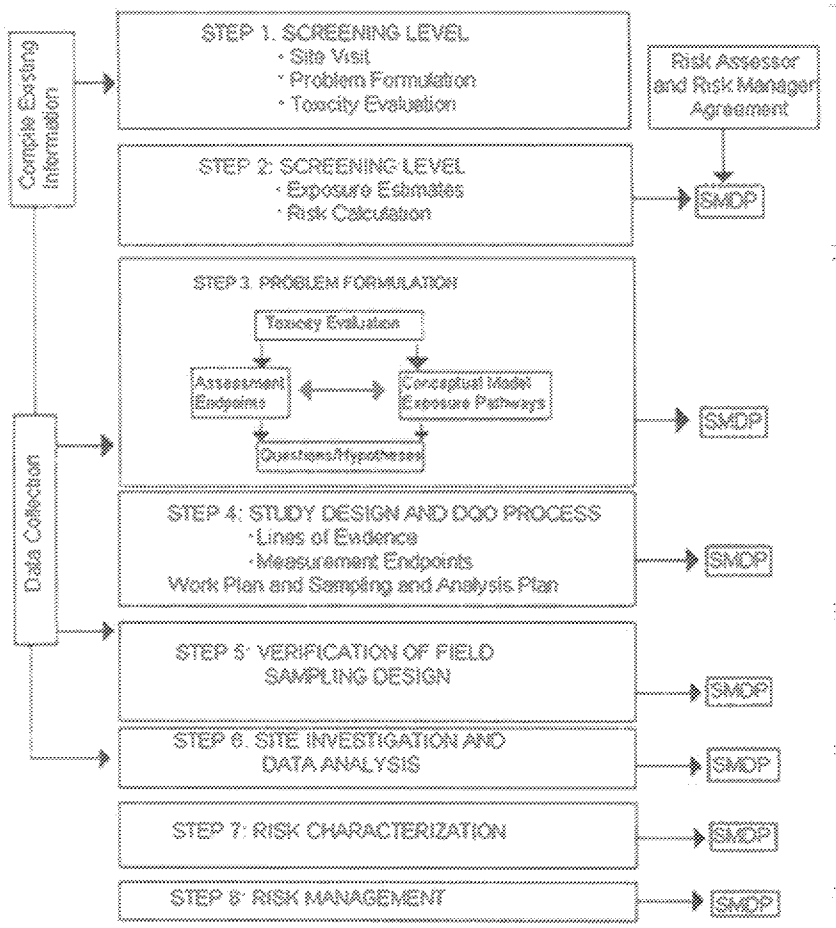
Ecological Risk Assessment Process

Ecological Risk Assessment Guidance for Superfund (ERAGS) 8-Step Process



Columbia Falls Aluminum Company Superfund Site

Jul 2017: Screening-Level Ecological Risk Assessment (SLERA) Report

May 2018: Baseline Ecological Risk Assessment (BERA) Work Plan

Aug 2018: BERA Work Plan Interim Deliverable – *Wildlife Exposure Modeling Approach*

Sep 2018: BERA Work Plan Interim Deliverable – *Refined Ecological Screening Values*

May-Nov 2018: Phase II Site Characterization Sampling: Background Sampling

Mar 2019: BERA Report submittal to EPA and MDEQ

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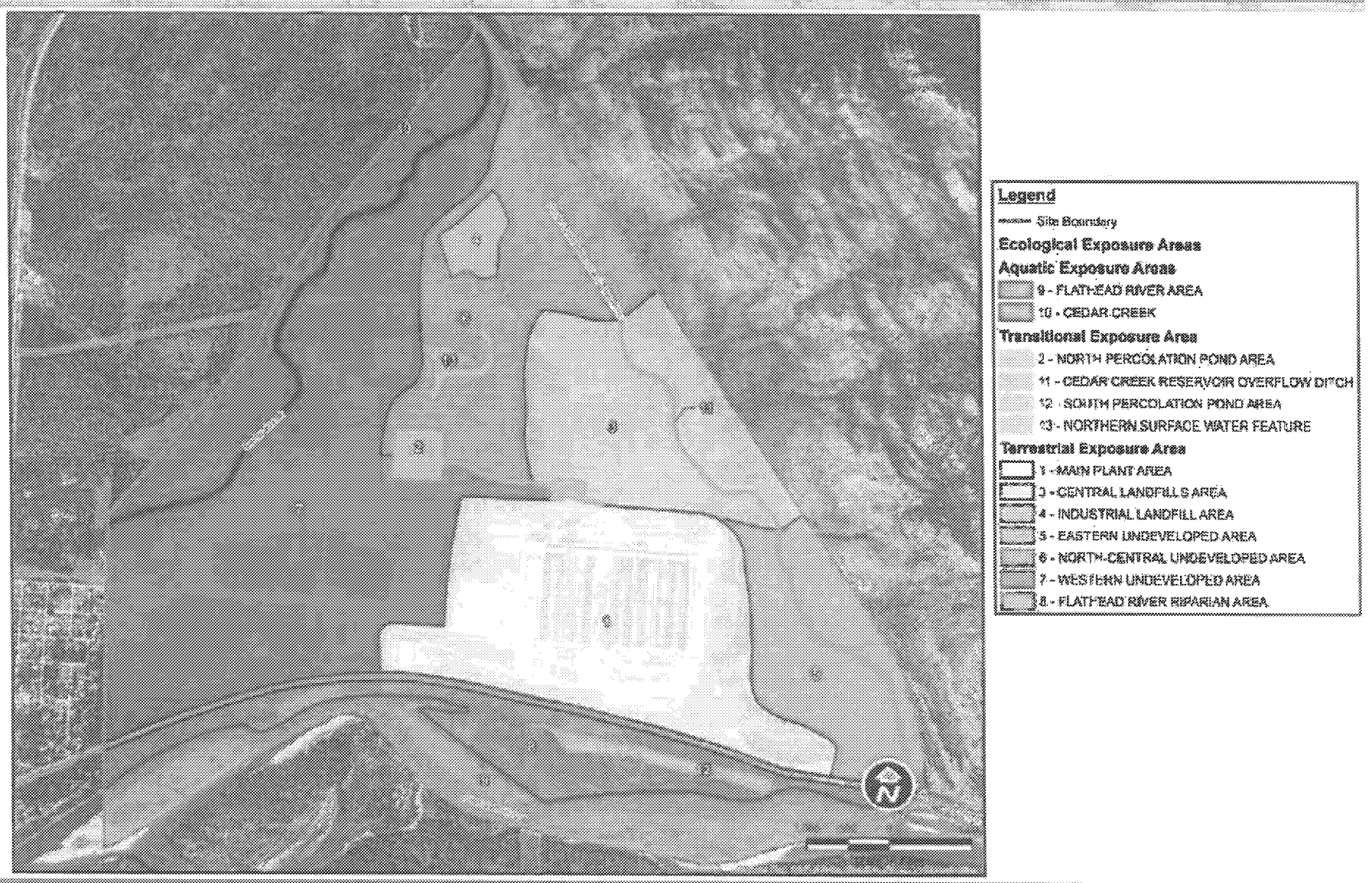
Ecological Exposure Areas



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Ecological Risk Assessment Exposure

Exposure Media	Receptor Groups	Exposure Route
• Soil • Surface Water • Sediment/Porewater • Biota	• Terrestrial plants • Soil invertebrates • Birds and mammals • Amphibians/reptiles • Aquatic plants • Benthic invertebrates • Fish	• Direct contact • Ingestion (water/biota) • Incidental ingestion (soil/sediment)

- Constituent Groups of Potential Ecological Concern:
  - Cyanide and Fluoride, PAHs
  - Inorganics (metals), PCBs and Dioxins

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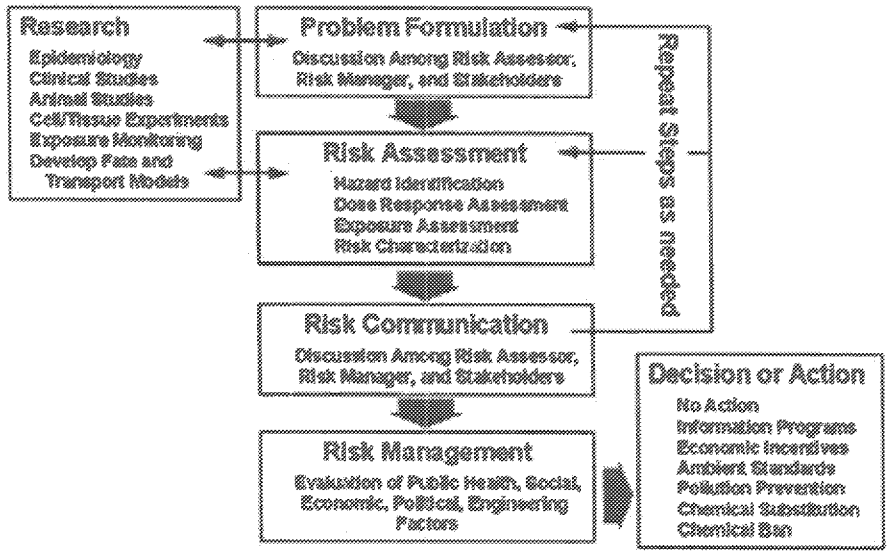
Human Health Risk Assessment

Human Health Risk Assessment Guidance for Superfund (RAGS)



Columbia Falls Aluminum Company Superfund Site

Nov 2015: Remedial Investigation/Feasibility Study Work Plan

May 2018: Baseline Human Health Risk Assessment (BHHA) Work Plan
Aug 2018: BHHRA Work Plan Interim Deliverable

May-Nov 2018: Phase II Site Characterization Sampling
Background Sampling

Mar 2019: BHHRA Report submittal to EPA and MDEQ

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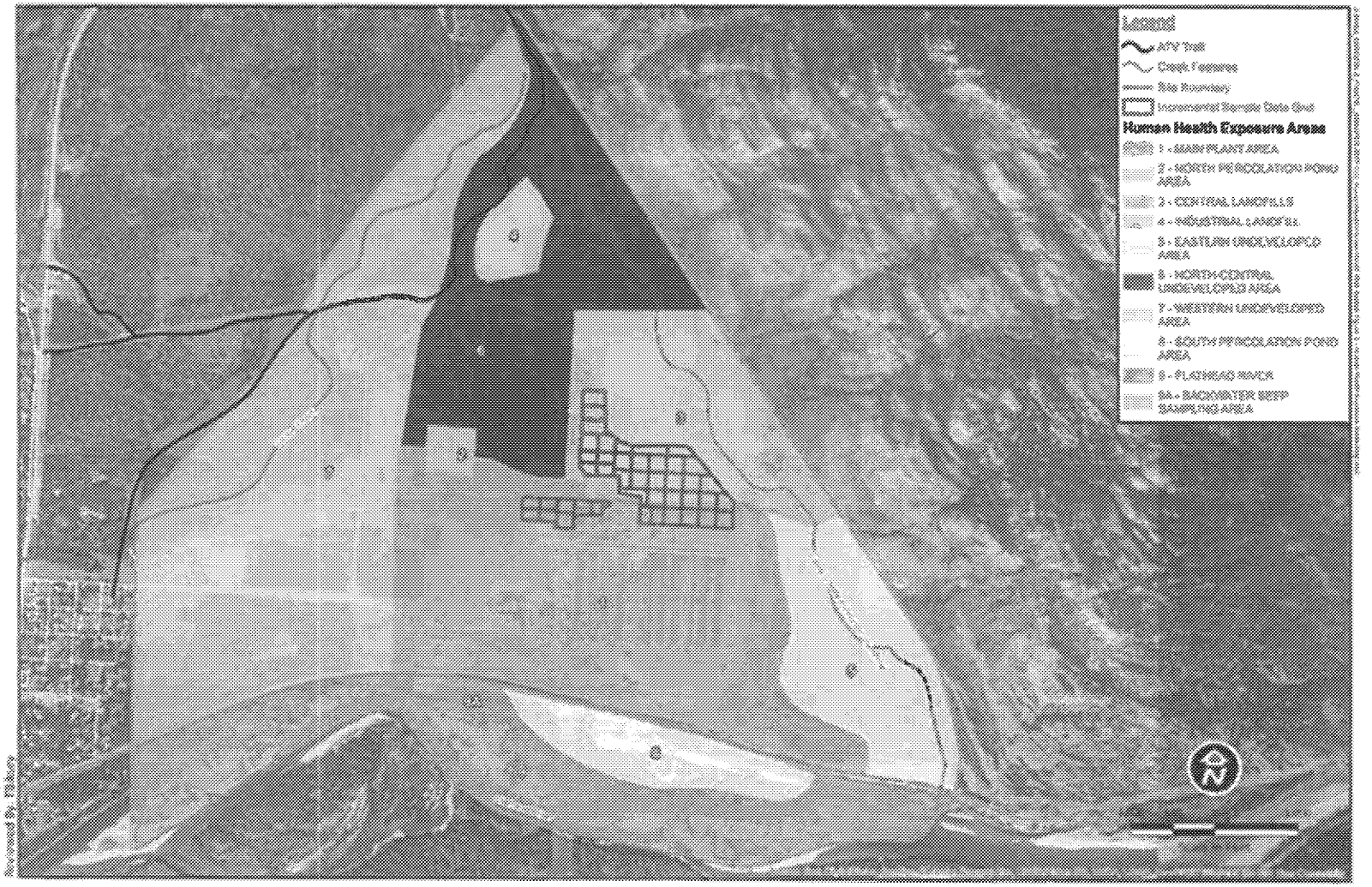
Human Health Exposure Areas



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Human Health Risk Assessment Exposure

Exposure Media	Receptor Groups	Exposure Route
• Soil • Groundwater • Surface Water • Sediment • Biota	• Trespassers • Recreators • Workers • Residents	• Direct contact • Game ingestion

- Constituent Groups of Potential Concern:
  - Cyanide and Fluoride, PAHs
  - Inorganics (metals), PCBs and Dioxins

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Evaluating Exposure Scenarios

- Exposure estimates:
  - Evaluate amount of potential exposure over a period of time
  - Evaluate if directly coming into contact or by ingestion
  - Based on measured concentrations in various media
- Tiered exposure scenarios:
  - Reasonable Maximum / Maximum: most conservative scenario
  - Central Tendency: more likely scenario; average exposure
- Uncertainty Analysis:
  - Identifies the uncertainties in the risk assessment process and potential impacts on BERA conclusions
- Risk Characterization:
  - Characterizes risk estimates in the absence of measures to reduce exposure

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Complete?	Remedial Investigation/Feasibility Study Recent and Upcoming Task Schedule	Schedule *Subject to EPA/DEQ Review
✓	Draft Phase I Site Characterization Data Summary Report	February 2017
✓	Draft Screening Level Ecological Risk Assessment Report	February 2017
✓	2017 Field Activities – Slug Testing and Asbestos Landfill Soil Sampling	Summer 2017
✓	Final Phase I Site Characterization Data Summary Report	September 2017
✓	Final Screening Level Ecological Risk Assessment Report	September 2017
✓	Groundwater and Surface Water Data Summary Report	November 2017
✓	Draft Baseline Human Health Risk Assessment Work Plan	November 2017
✓	Draft Baseline Ecological Risk Assessment Work Plan	November 2017
✓	Draft Phase II Sampling and Analysis Plan	February 2018
	Phase II Remedial Investigation Field Program	April 2018 – October 2018
	Draft Phase II Site Characterization Data Summary Report	1st Quarter 2019
	Draft Baseline Risk Assessments	1st Quarter 2019
	Final Baseline Risk Assessments	3rd Quarter 2019
	Feasibility Study Work Plan	2020
	Feasibility Study Report Submitted to EPA	2021

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