City of Wasilla
May 13, 2019

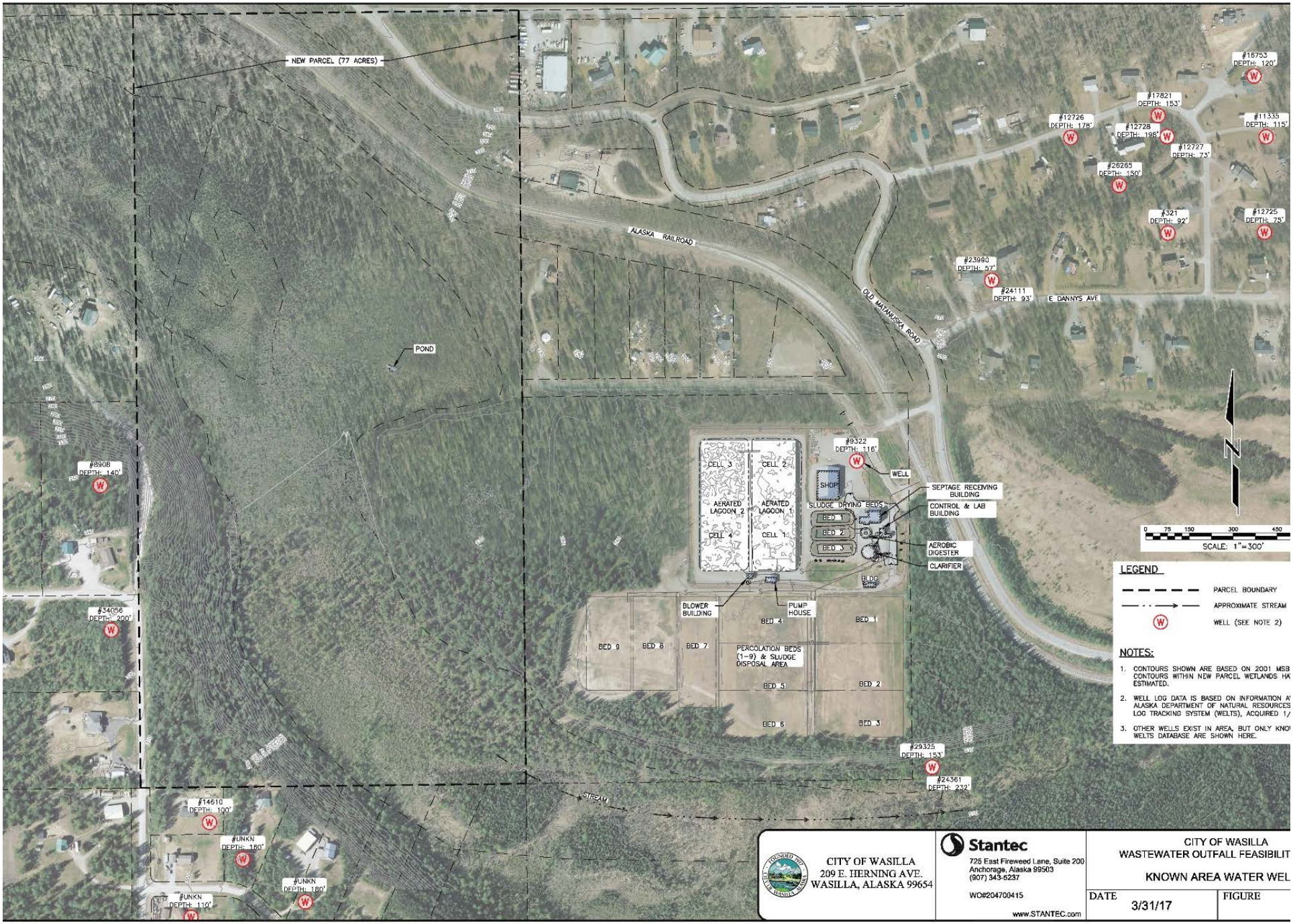
Wastewater Outfall Pilot Study

– Status Update

Stantec

Outline

- Project Overview
- Work to Date
- Next Steps


NEW PARCEL (77 ACRES)
POND
ALASKA RAILROAD
OLD MATANUSKA ROAD
E DANNYS AVE
#16753 DEPTH: 120'
#17821 DEPTH: 153'
#12726 DEPTH: 178'
#12728 DEPTH: 198'
#11335 DEPTH: 115'
#12727 DEPTH: 73'
#26265 DEPTH: 150'
#321 DEPTH: 92'
#12725 DEPTH: 75'
#23990 DEPTH: 57'
#24111 DEPTH: 93'
#8908 DEPTH: 140'
#34056 DEPTH: 200'
#14610 DEPTH: 100'
#UNKN DEPTH: 150'
#UNKN DEPTH: 180'
#UNKN DEPTH: 110'
#9322 DEPTH: 116'
WELL
SEPTAGE RECEIVING BUILDING
CONTROL & LAB BUILDING
AEROBIC DIGESTER
CLARIFIER
BLDG
SHOP
SLUDGE DRYING BEDS
BED 1
BED 2
BED 3
CELL 3
CELL 2
CELL 4
CELL 1
AERATED LAGOON 2
AERATED LAGOON 1
BLOWER BUILDING
PUMP HOUSE
BED 4
BED 1
BED 9
BED 8
BED 7
PERCOLATION BEDS (1-9) & SLUDGE DISPOSAL AREA
BED 5
BED 2
BED 6
BED 3
#29325 DEPTH: 153'
#24361 DEPTH: 232'
STREAM
N
0 75 150 300 450
SCALE: 1"=300'
LEGEND
PARCEL BOUNDARY
APPROXIMATE STREAM
WELL (SEE NOTE 2)
NOTES:
1. CONTOURS SHOWN ARE BASED ON 2001 MSB CONTOURS WITHIN NEW PARCEL WETLANDS HA ESTIMATED.
2. WELL LOG DATA IS BASED ON INFORMATION A ALASKA DEPARTMENT OF NATURAL RESOURCES LOG TRACKING SYSTEM (WELTS), ACQUIRED 1/
3. OTHER WELLS EXIST IN AREA, BUT ONLY KNO WELTS DATABASE ARE SHOWN HERE.
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WASILLA, ALASKA 99654
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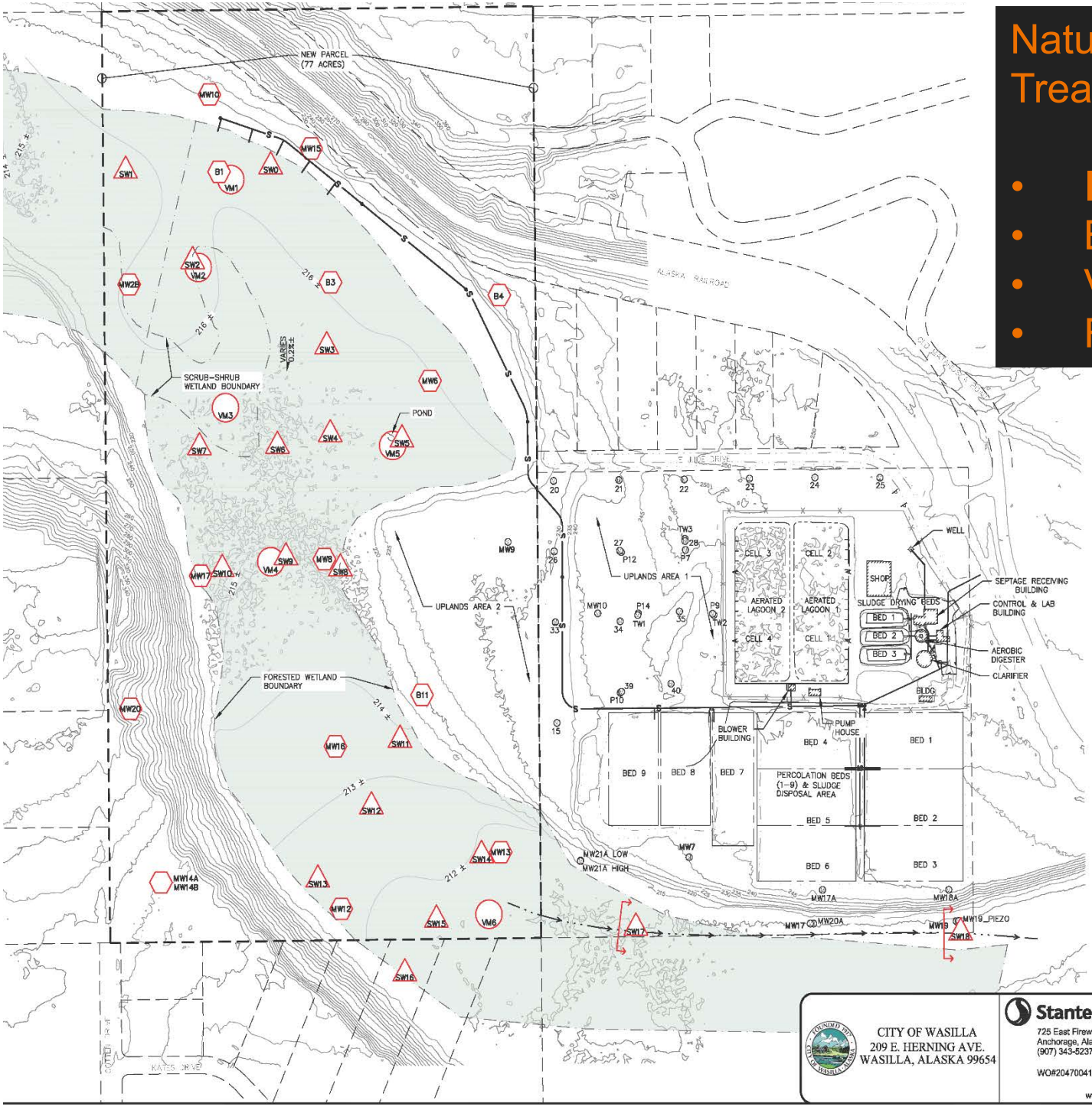
CITY OF WASILLA
WASTEWATER OUTFALL FEASIBILIT
KNOWN AREA WATER WEL
DATE
3/31/17
FIGURE


Slope Leakage


Nitrates in Groundwater

Natural Wetlands Treatment / Disposal

- Infiltration
- Biological Treatment
- Vegetative Uptake
- Filtration



2. SURFACE WATER, SUBSURFACE WATER, AND VEGETATION SAMPLING LOCATIONS WERE COLLECTED WITH A HANDHELD GPS.

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CITY OF WASILLA
WASTEWATER OUTFALL PILOT STUDY

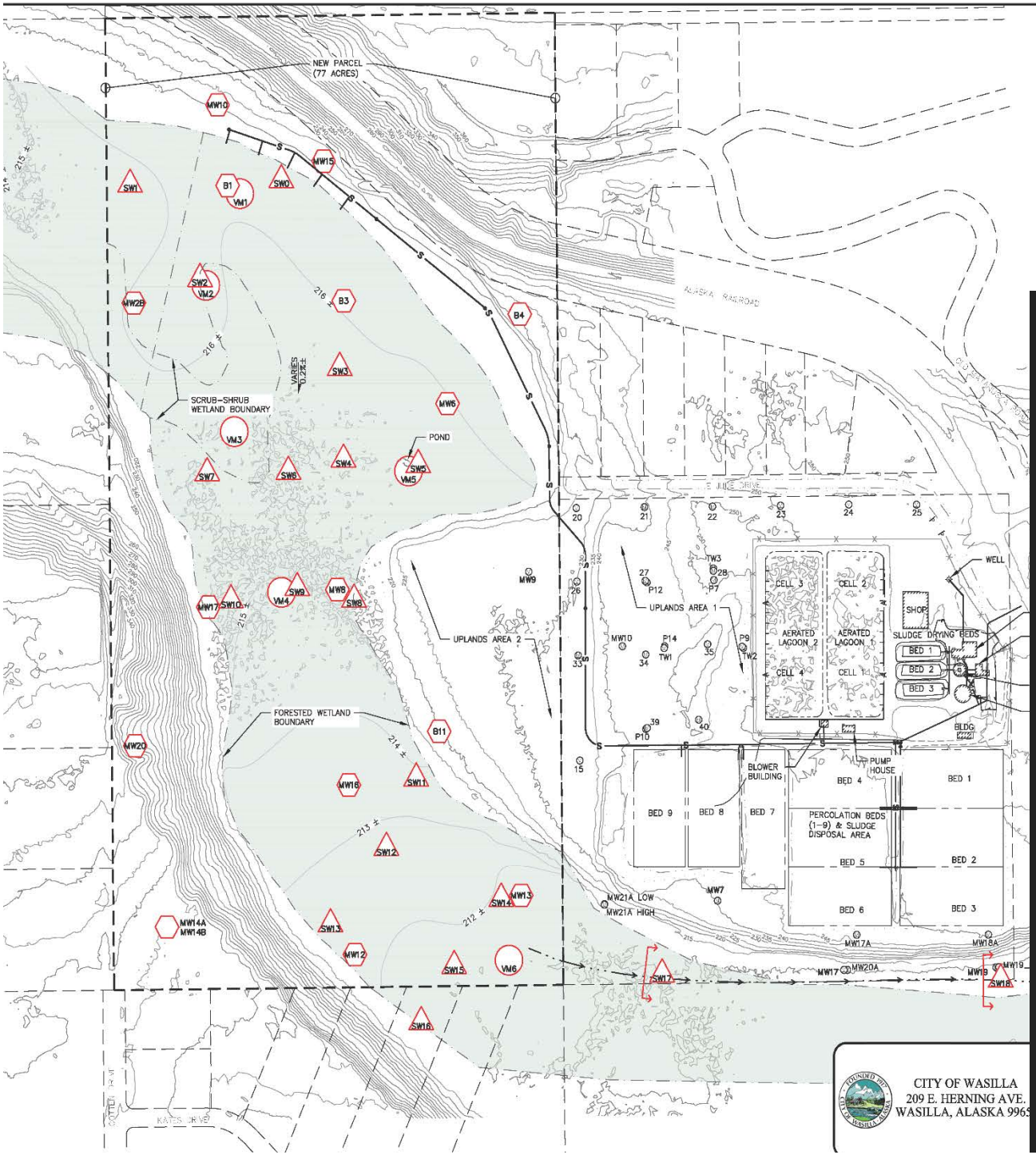
SAMPLING SITES

DATE 04/20/18

FIGURE 1

Work to Date

- Draft feasibility study
- Pilot study plan
- SubWet model
- Agency scoping and coordination
- Wetland delineation
- Archeological survey
- Geotechnical investigation
- Hydrogeologic study & groundwater modeling
- Background data collection (~22 months)
- Website
- Design & construction of discharge piping & road



LEGEND

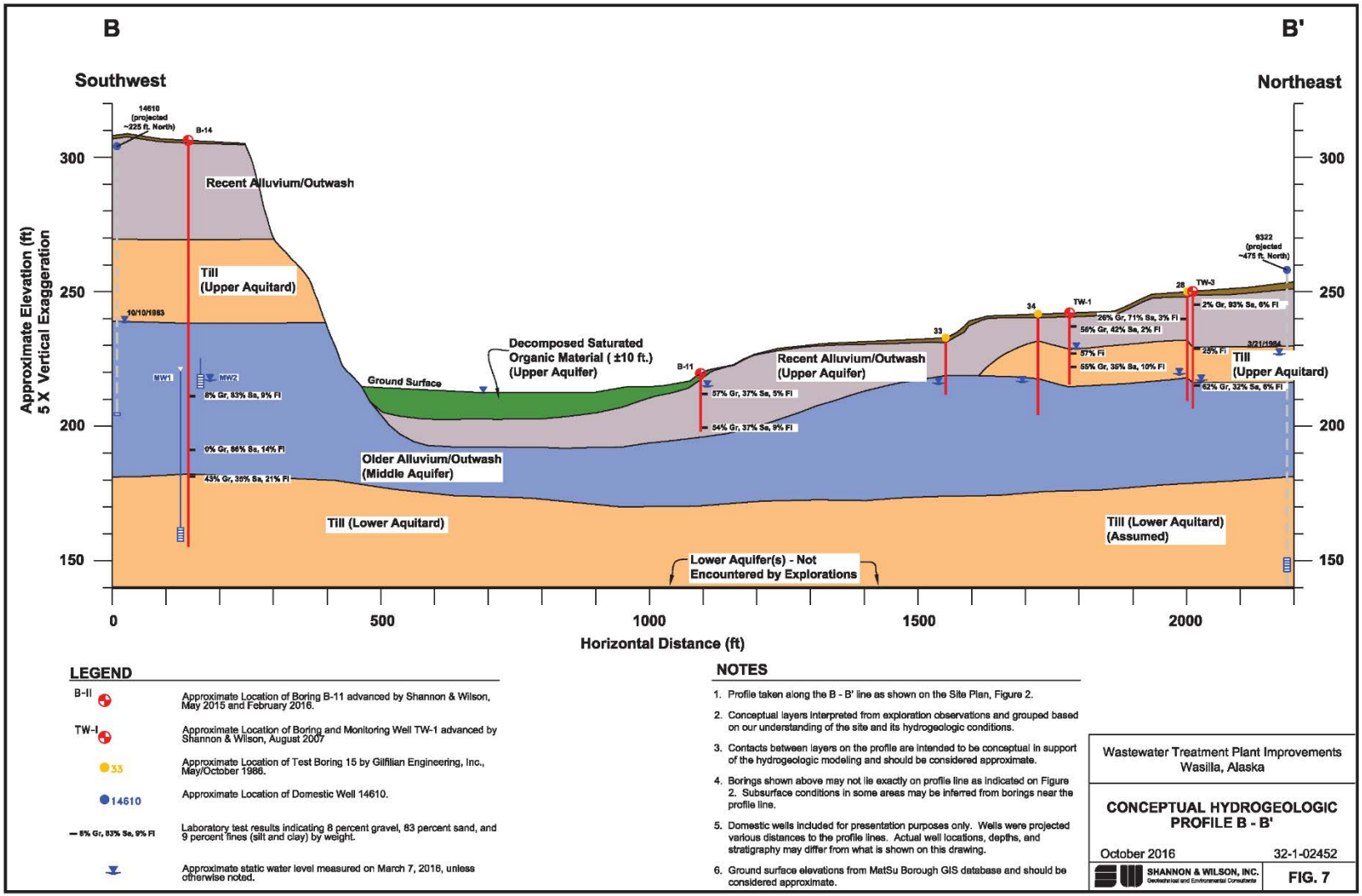
- APPROXIMATE STREAM CHANNEL
- PARCEL BOUNDARY
- WETLANDS
- SW5 — SURFACE WATER SAMPLING SITE
- MW6 B5 — SUBSURFACE WATER SAMPLING SITE
- VM5 — VEGETATION MONITORING SITE
- STREAM GAGING STATION

Water Quality Background Data

- 19 surface sites (monthly)
- 16 groundwater wells (quarterly)
- 11 private wells
- 2 stream gauges
- 6 vegetation monitoring sites (quarterly)
- Aerial imagery

Parameters

- Biological oxygen demand
- Total suspended solids
- pH
- Fecal and total coliforms
- Nitrate / Nitrite
- Ammonia
- Phosphorous
- Metals
- WET Testing (4x)



LEGEND

B-11	Approximate Location of Boring B-11 advanced by Shannon & Wilson, May 2015 and February 2016.
TW-1	Approximate Location of Boring and Monitoring Well TW-1 advanced by Shannon & Wilson, August 2007
33	Approximate Location of Test Boring 15 by Gilfillan Engineering, Inc., May/October 1986.
14610	Approximate Location of Domestic Well 14610.
— 8% Gr, 83% Sa, 9% Fi	Laboratory test results indicating 8 percent gravel, 83 percent sand, and 9 percent fines (silt and clay) by weight.
	Approximate static water level measured on March 7, 2016, unless otherwise noted.

NOTES

1. Profile taken along the B - B' line as shown on the Site Plan, Figure 2.
2. Conceptual layers interpreted from exploration observations and grouped based on our understanding of the site and its hydrogeologic conditions.
3. Contacts between layers on the profile are intended to be conceptual in support of the hydrogeologic modeling and should be considered approximate.
4. Borings shown above may not lie exactly on profile line as indicated on Figure 2. Subsurface conditions in some areas may be inferred from borings near the profile line.
5. Domestic wells included for presentation purposes only. Wells were projected various distances to the profile lines. Actual well locations, depths, and stratigraphy may differ from what is shown on this drawing.
6. Ground surface elevations from MatSu Borough GIS database and should be considered approximate.

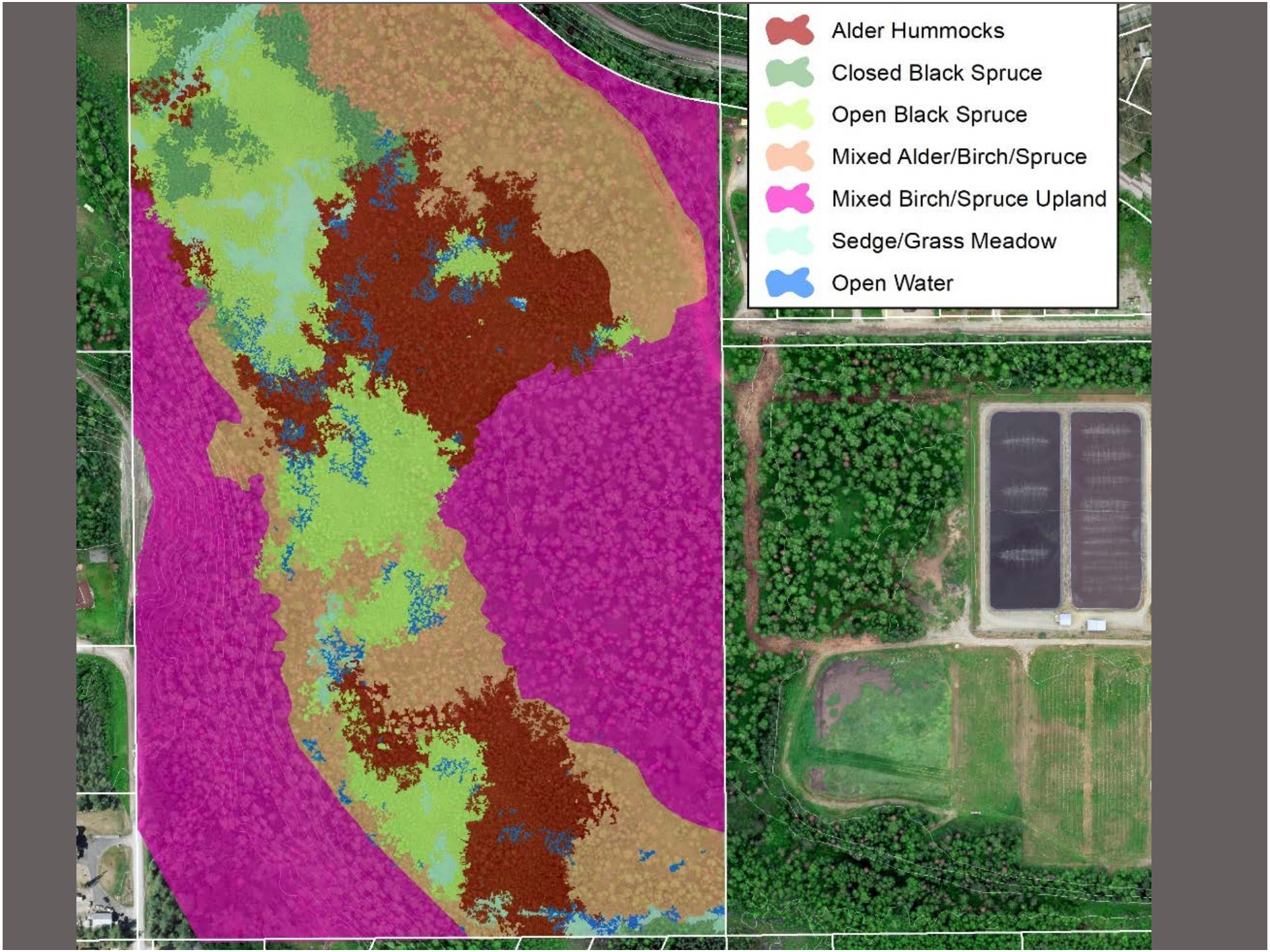
Wastewater Treatment Plant Improvements
Wasilla, Alaska

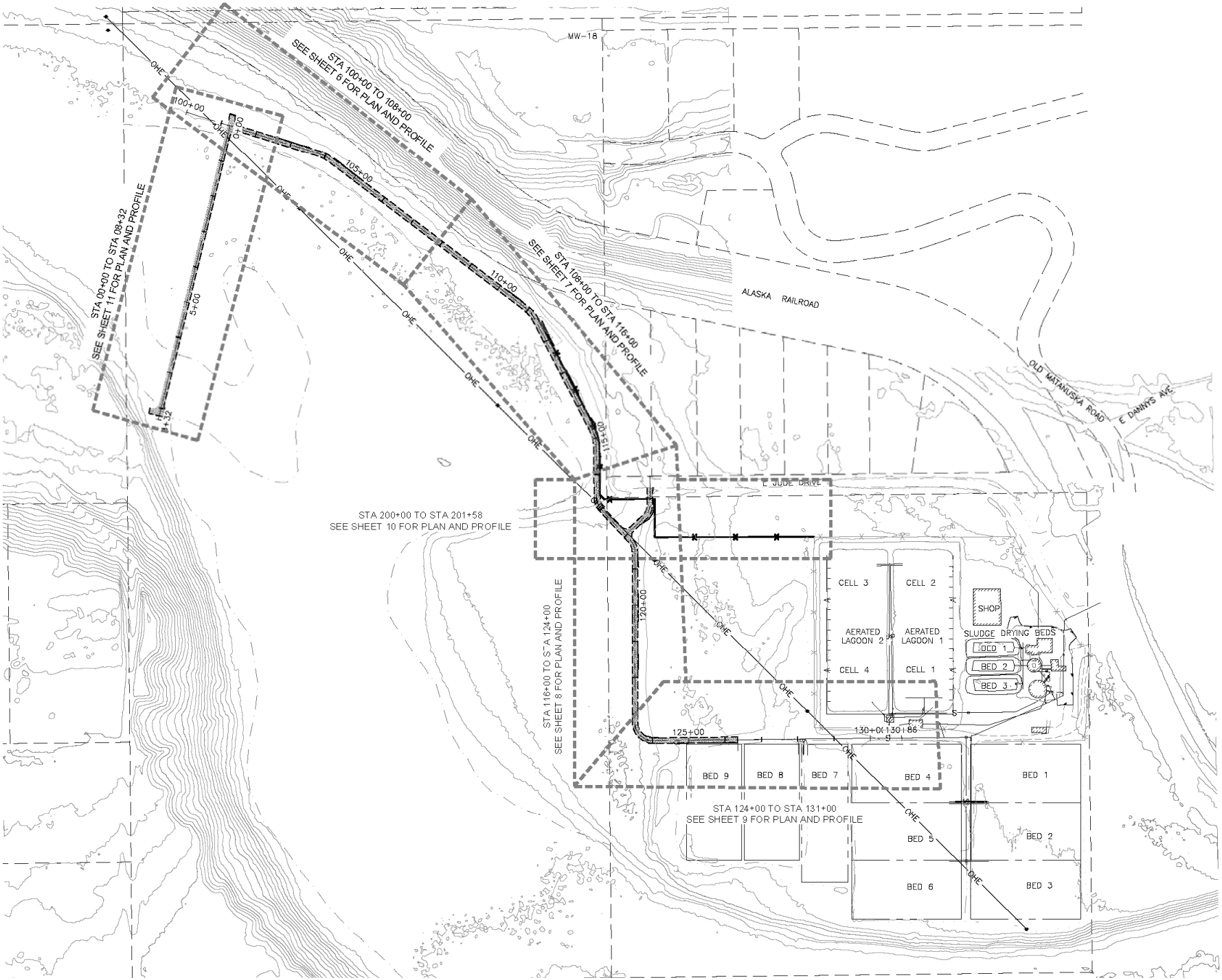
CONCEPTUAL HYDROGEOLOGIC PROFILE B - B'

October 2016 32-1-02452

SHANNON & WILSON, INC. Geotechnical and Environmental Consultants

FIG. 7


Alder Hummocks
Closed Black Spruce
Open Black Spruce
Mixed Alder/Birch/Spruce
Mixed Birch/Spruce Upland
Sedge/Grass Meadow
Open Water


MW-18
STA 100+00 TO 108+00
SEE SHEET 6 FOR PLAN AND PROFILE
STA 00+00 TO STA 08+32
SEE SHEET 11 FOR PLAN AND PROFILE
100+00
0+00
5+00
105+00
110+00
STA 108+00 TO STA 116+00
SEE SHEET 7 FOR PLAN AND PROFILE
115+00
ALASKA RAILROAD
OLD MATANUSKA ROAD
E DANNYS AVE
E JUDE DRIVE
STA 200+00 TO STA 201+58
SEE SHEET 10 FOR PLAN AND PROFILE
STA 116+00 TO STA 124+00
SEE SHEET 8 FOR PLAN AND PROFILE
120+00
CELL 3
CELL 2
CELL 4
CELL 1
AERATED LAGOON 2
AERATED LAGOON 1
SHOP
SLUDGE DRYING BEDS
BED 1
BED 2
BED 3
125+00
130+00
130+86
BED 9
BED 8
BED 7
BED 4
BED 1
BED 5
BED 2
BED 6
BED 3
STA 124+00 TO STA 131+00
SEE SHEET 9 FOR PLAN AND PROFILE
OHE

Next Steps

- Pilot Study Discharge – June 2019
- Discharge monitoring including DNA specific fecal coliform
- Dye tracer study
- Drone flights
- Model calibration
- Reporting
- Public involvement

City of Wasilla Wastewater Outfall Pilot Study

May 13, 2019

Questions?

Stantec