



March 4, 2005

Ms. Celia Bayless
Fujicolor Processing, Inc.
120 White Plains Road
Tarrytown, NY 10591

Re: Focused Subsurface Investigation
770 Andover Park East
Tukwila, Washington

EPI Project No. 47202.0

Dear Ms. Bayless:

Environmental Partners, Inc. (EPI) is pleased to provide this letter report presenting the results of a recently completed Focused Subsurface Investigation (FSI) for the leased portion of the property located at 770 Andover Park East in Tukwila, Washington (subject property). The subject property is currently leased by Fujicolor Processing, Inc. (FCP) and unoccupied. The general location of the subject property is indicated on Figure 1.

EPI submitted a request to the Washington State Department of Ecology (Ecology) to have the subject property entered into the Voluntary Cleanup Program (VCP) program. Ecology acknowledged receipt of this request in a letter dated February 3, 2005 and the subject property has been issued TCP identification number NW1393.

SITE BACKGROUND

According to Mr. Bill Taylor, Operations Manager for FCP, the subject property was occupied and operated as a photofinishing operation by FCP from May 1997 to March 2004. Film and paper processing equipment were located along a concrete trench. Piping for processing equipment feed solutions and return solutions was located in the concrete trench. All piping was enclosed and sealed and the concrete trench acted as secondary containment. FCP regenerated and reused paper developer, film, paper bleach, and fixer processing solutions. Silver was recovered from the fixer solutions by electrolysis and metallic replacement. Chemical mixing, solution regeneration, and silver recovery operations were performed in the southeastern portion of the subject property where a sump and catch basin were located. The approximate locations of the trench, former processing equipment, and former sump are depicted on Figure 2.

EPI reviewed the *Soil Sample Results* letter report prepared by NAC Consultants, Inc. (NAC) dated November 19, 2004. According to this document, the concrete trench and sump was removed in November 2004. NAC was retained by FCP to assess potential impacts to soil on the subject property. NAC collected six soil samples along the former trench bottom and beneath the location of the former sump. The samples from beneath the former concrete trench were located approximately 2 to 4 feet below the floor surface and the samples from beneath the former sump were located approximately 6 to 8 feet below the floor surface. No ground water samples were collected during the NAC investigation. The soil samples were submitted to Analytical Resources, Inc. in Tukwila, Washington for the analysis of total silver using EPA Method 6010B. Analytical results indicated that silver was detected in all six samples, but at concentrations below the Model Toxics Control Act (MTCA) Method B Direct Contact Pathway for Unrestricted Land Use cleanup level of 400 milligrams per kilogram (mg/kg). NAC concluded that no additional work was necessary on the subject property. The analytical results for NAC soil samples are summarized at the bottom of Table 1. The locations and detected silver concentrations of the NAC soil samples are depicted on Figure 2.

Hart Crowser (HC) was retained by Mr. John Brekke (property owner) to assess the environmental investigation conducted by NAC. HC determined that a soil cleanup level which was protective of ground water was necessary for the subject property. A site-specific soil cleanup level protective of ground water was based upon MTCA regulations which determine how to derive soil concentrations for the purpose of ground water protection (WAC 173-340-747). A site-specific soil cleanup level for silver was calculated to be 13.7 mg/kg using the fixed-parameter, three-phase partitioning model. This calculated cleanup value was confirmed by EPI. Five of the six samples collected by NAC exceeded this site-specific soil cleanup level for silver. HC concluded that additional soil investigation and cleanup was necessary at the subject property to ensure that the soil-to-ground water pathway was adequately protected.

OBJECTIVES

The objective of this FSI was to assess the lateral and horizontal extent of silver impacts in soil that might exceed a site-specific soil cleanup level for silver (13.7 mg/kg) and to determine whether or not ground water had been impacted by silver as a result of operations conducted by FCP at the facility. EPI received written authorization to perform the work described herein by Ms. Celia Bayless, Fujicolor Processing, Inc., Vice-President Environment, Safety, and Health, on January 17, 2005.

SCOPE OF WORK

EPI advanced a total of nineteen soil borings using standard direct-push technology (DPT) drilling and sampling techniques at the locations indicated in Figure 2. The maximum depth of exploration during the course of the FSI was 16 feet below the concrete floor surface inside the building, which was elevated approximately 3.4 feet above the exterior ground surface.

During drilling, soil samples were collected at approximate 3- to 4-foot vertical intervals. The soil conditions encountered during drilling were described using the Unified Soil Classification System

(USCS) visual-manual procedures (ASTM 2488D) and are presented in soil borings logs included in Attachment A.

Soil sampling locations and depths were chosen to provide lateral and vertical delineation of potential silver impacts and were selected based on the results of previous soil sampling and locations of the former processing equipment, trench area, and former sump. Soil samples were not collected from a location south of the former sump due to the presence of stockpiled soil in this area. A total of 39 soil samples (including 4 duplicate samples) were submitted to CCI Analytical Laboratories in Everett, Washington for the analysis of total silver by EPA Method 6010B.

Groundwater was sampled from three locations believed to be down-gradient of the trench and former sump areas. Ground water was encountered in two boring locations inside the subject property building at approximately 11.5 feet below floor surface (bfs). Ground water was encountered in one location on the exterior portion of the property at approximately 6 feet below ground surface (bgs). The concrete floor surface inside the subject property building is situated approximately 3.4 feet above the exterior, asphalt-covered, ground surface. Therefore, the relative depth to ground water varied between 6 and 8 feet bgs. Ground water samples were collected using a peristaltic pump. Dedicated tubing was used for each sample. Ground water was purged from the sampling point for several minutes, then passed through a 40-micron filter, and collected directly into appropriate sample containers at a flow rate of less than 100 milliliters per minute. Three ground water samples were submitted to CCI Analytical Laboratories in Everett, Washington for the analysis of total silver by EPA Method 6010B.

Immediately upon collection, all soil and ground water samples were labeled and placed in an iced cooler pending submittal to the analytical laboratory. All samples were handled and transported under standard chain-of-custody protocols.

FINDINGS

Subsurface Conditions

Conditions in the interior of the subject property building generally consisted of 6 inches of concrete at the surface underlain by sub-base gravel fill, beneath which intermittent intervals of silt, sand, and gravel mixtures were observed to the maximum depth of exploration of approximately 16 feet bfs in the eighteen interior locations.

Conditions in the one exterior location of the property consisted of approximately 3 inches of asphalt at the surface underlain by intermittent intervals of silt, sand and gravel mixtures which were observed to the maximum depth of exploration of 12 feet bgs in the one exterior location.

Groundwater was encountered inside the subject property building at approximately 11.5 feet bfs which is equivalent to approximately 8 feet bgs. Ground water was encountered at 6 feet bgs on the exterior portion of the property. Therefore, the depth to ground water varied between 6 and 8 feet bgs.

Descriptions of the soil types encountered at each boring location are presented in the boring logs in Attachment A.

Analytical Results

The analytical results for soil discussed in this section are compared to a site-specific soil cleanup level for silver of 13.7 mg/kg. This cleanup level was calculated by HC and verified by EPI. A site-specific soil cleanup level for silver was calculated using the fixed-parameter, three-phase partitioning model. The calculation is based upon MTCA regulations in Chapter 173-340 WAC which indicate how to derive soil concentrations for the purpose of ground water protection (WAC 173-340-747).

The analytical results for ground water discussed in this section are compared to the MTCA Method B ground water cleanup level of 80 micrograms/liter ($\mu\text{g/L}$) for silver.

Soil Samples

As noted above, a total of 39 soil samples (including 4 duplicate samples) were submitted for analysis of total silver using EPA Method 6010B. The analytical results for these soil samples are summarized in Table 1. The locations and detected silver concentrations for these samples are shown in Figure 2. Final laboratory analytical reports are presented in Attachment B.

Silver was detected in one soil sample location (EN:6) at a concentration exceeding a site-specific soil cleanup level of 13.7 mg/kg. The detected silver concentration in sample EN:6 was 35 mg/kg at approximately 6 feet below bfs. This sample location is situated between the former location of the processing equipment and the former sump at a depth approximately two feet below the bottom of the former concrete trench. Silver was also detected in four additional sample locations, but at concentrations below the cleanup level. Silver was not detected in any of the remaining 34 soil samples above the laboratory detection limits of approximately 2.7 mg/kg.

Ground Water Samples

As noted above, a total of three ground water samples were submitted for the analysis of total silver using EPA Method 6010B. The analytical results for these ground water samples are summarized in Table 2. The locations of these ground water samples are shown on Figure 2. Final laboratory analytical reports are presented in Attachment B.

None of the ground water samples submitted for analysis contained silver concentrations exceeding laboratory detection limits.

CONCLUSIONS

The following conclusions are supported by the findings of this Focused Subsurface Investigation and in connection with the data from the previous NAC investigation:

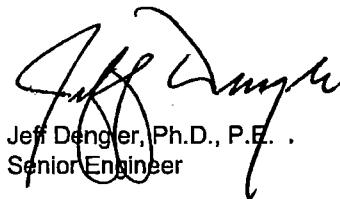
- Conditions in the interior of the subject property building generally consisted of approximately 6 inches of concrete at the surface underlain by sub-base gravel fill, beneath which intermittent intervals of silt, sand, and gravel mixtures were observed to the maximum depth of exploration of 16 feet bfs in eighteen interior locations. Conditions in

the one exterior location of the property consisted of approximately 3 inches of asphalt at the surface underlain by intermittent intervals of silt, sand, and gravel mixtures which were observed to the maximum depth of exploration of 12 feet bgs in the one exterior location.

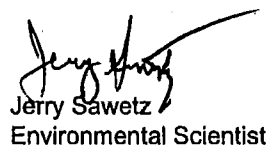
- A water table was encountered in three boring locations at relative depths between 6 and 8 feet bgs.
- Concentrations of silver in soil exceeded a site-specific soil cleanup level protective of ground water (i.e., 13.7 mg/kg) in one of the thirty-nine EPI soil sample locations and five of six NAC soil sample locations. This impacted soil was consistently located at depths between approximately four and six feet bfs in the locations of the former concrete trench, which had previously housed piping for feed and return solutions, and former sump. Given the fact that the trench bottom was previously situated at approximately 4 feet bfs, the observed soil impacts would be consistent with a release occurring along the bottom of the former concrete trench. Soil impacts appear limited to the immediate vicinity of the former trench and sump areas and do not appear to extend substantially, if at all, beyond these locations.
- Ground water does not appear to be impacted with silver on the subject property.
- It appears that a readily applicable remedial strategy for the subject property would be to excavate soil impacted by silver concentrations exceeding a site-specific soil cleanup level at the subject property. It is estimated that approximately 90 to 100 cubic yards of potentially impacted soil would need to be excavated. Approximately 35 cubic yards of soil would need to be excavated in a 3-foot wide by 2-foot deep cross-section along the center of northwest and central parts of the trench (from near sample AC to the corner south of sample DC). An estimated 20 cubic yards of soil would be excavated from the north edge of the concrete cut near the locations of samples EN and SS-4. The excavation in this area would be between 4 and 8 feet deep near sample location EN and 2 to 6 feet deep near sample location SS-4. An estimated 30 cubic yards of soil would be excavated from depths of between 6 and 10 feet at the location beneath the former sump. Finally, an estimated additional 10 cubic yards of stockpiled soil from the area immediately south of the former sump and from soil fill used in the trench just west of the former sump should also be excavated.
- EPI submitted a request to the Ecology to have the subject property entered into the Voluntary Cleanup Program (VCP) program. Ecology acknowledged receipt of this request in a letter dated February 3, 2005 and the subject property has been issued TCP identification number NW1393. EPI will submit future work plans pertaining to the subject property to Ecology for review prior to performing any additional environmental work.

EPI appreciates the opportunity to be of assistance on this project. As always, if you have any questions or comments please do not hesitate to contact me at (425) 395-0010.

Sincerely,



Jeff Dengler, Ph.D., P.E.
Senior Engineer



Jerry Sawetz
Environmental Scientist

TABLES

Table 1 – Summary of Silver Concentrations in Soil

Table 2 – Summary of Silver Concentrations in Ground Water

FIGURES

Figure 1 – General Vicinity Map

Figure 2 – Boring Locations With Concentrations of Silver in Soil and Ground Water

ATTACHMENTS

Attachment A – Soil Boring Logs

Attachment B – Analytical Laboratory Reports

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Tables

Table 1
Summary of Silver Concentrations in Soil
Focused Subsurface Investigation
770 Andover Park East, Tukwila, Washington

Sample Location	Sample Depth (ft) ^(a)	Sample Date	Total Silver Analyzed Using EPA Method 6010B (mg/kg)
AC:4	4.0	2/1/05	6.1
AC:8	8.0	2/1/05	ND<2.1
AC:8D	8.0	2/1/05	ND<2.7
AS:3	3.0	2/1/05	ND<3.0
AS:3D	3.0	2/1/05	ND<2.1
AS:6	6.0	2/1/05	ND<2.8
B-1:5	5.0	1/31/05	ND<2.1
B-1:8	8.0	1/31/05	ND<2.4
B-2:6	6.0	1/31/05	ND<3.0
B-2:9	9.0	1/31/05	ND<2.3
CC:4	4.0	2/1/05	ND<2.7
CC:8	8.0	2/1/05	ND<3.1
CE:3	3.0	1/31/05	ND<2.4
CE:6	6.0	1/31/05	ND<2.8
CS:3	3.0	2/1/05	ND<2.7
CS:6	6.0	2/1/05	ND<2.5
DC:4	4.0	2/1/05	10
DC:7	7.0	2/1/05	ND<2.8
DE:3	3.0	1/31/05	3.7
DE:6	6.0	1/31/05	5.6
DW:3	3.0	1/31/05	ND<2.4
DW:6	6.0	1/31/05	ND<2.2
EC:4	4.0	2/1/05	ND<2.7
EC:8	8.0	2/1/05	ND<3.3
EC:8D	8.0	2/1/05	ND<3.1
EN:3	3.0	1/31/05	ND<2.3
EN:6	6.0	1/31/05	35
ES:3	3.0	1/31/05	ND<2.8
ES:6	6.0	1/31/05	ND<2.7
F:4	4.0	1/31/05	ND<2.8
F:7	7.0	1/31/05	ND<2.4
F:11	11.0	1/31/05	ND<3.0
G:4	4.0	1/31/05	ND<3.1
G:7	7.0	1/31/05	ND<2.8
G:11	11.0	1/31/05	ND<2.7
H:4	4.0	2/1/05	ND<2.6
H:7	7.0	2/1/05	ND<2.3
H:7D	7.0	2/1/05	ND<2.8
H:10	10.0	2/1/05	ND<2.7
Results of Previous Soil Sampling by NAC Consultants			
SS-1	4.0	11/9/04	27.7
SS-2	4.0	11/9/04	21
SS-3	4.0	11/9/04	201
SS-4	4.0	11/9/04	24
SS-5	8.0	11/9/04	13
SS-6	6.0	11/9/04	32
Site-Specific Soil Cleanup Level			13.7

Bold - Indicates that concentration exceeds the site-specific soil cleanup level.

(a) - Sample depth from the top of the concrete surface inside the building which is situated approximately 3.4 feet above the exterior ground surface.

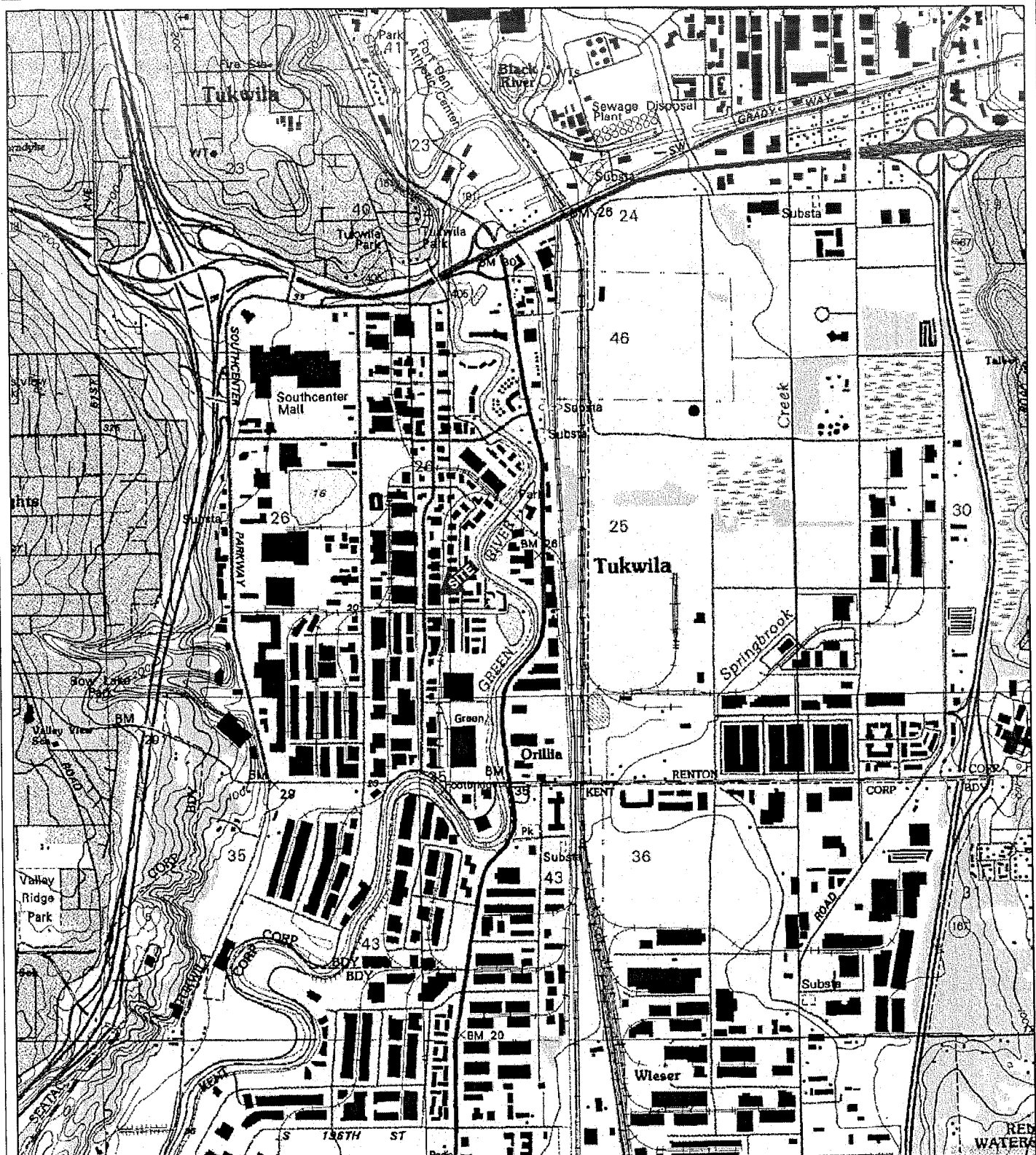
Table 2
Summary of Silver Concentrations in Ground Water
Focused Subsurface Investigation
770 Andover Park East, Tukwila, Washington

Sample Location	Approximate Depth to Ground Water ^(a)	Sample Date	Total Silver Analyzed Using EPA Method 6010B (µg/L)
RGW:11.5	8.1	1/31/05	ND<30
TGW:11.5	8.1	1/31/05	ND<30
S:6	6.0	2/1/05	ND<30
MTCA Method B Ground Water Cleanup Level			80

(a) - The floor surface of the building is elevated approximately 3.4 feet above the exterior ground surface. Therefore, the depth to ground water is measured from the exterior ground surface.

ND - Not detected above listed laboratory detection limit.

Figures



KEY: SOURCE: USGS 7.5 MINUTE QUADRANGLES
(TOPOGRAPHIC)



RENTON, WASHINGTON
1949 (PHOTOREVISED 1994)
DES MOINES, WASHINGTON
1949 (PHOTOREVISED 1995)

SCALE = 1:24,000



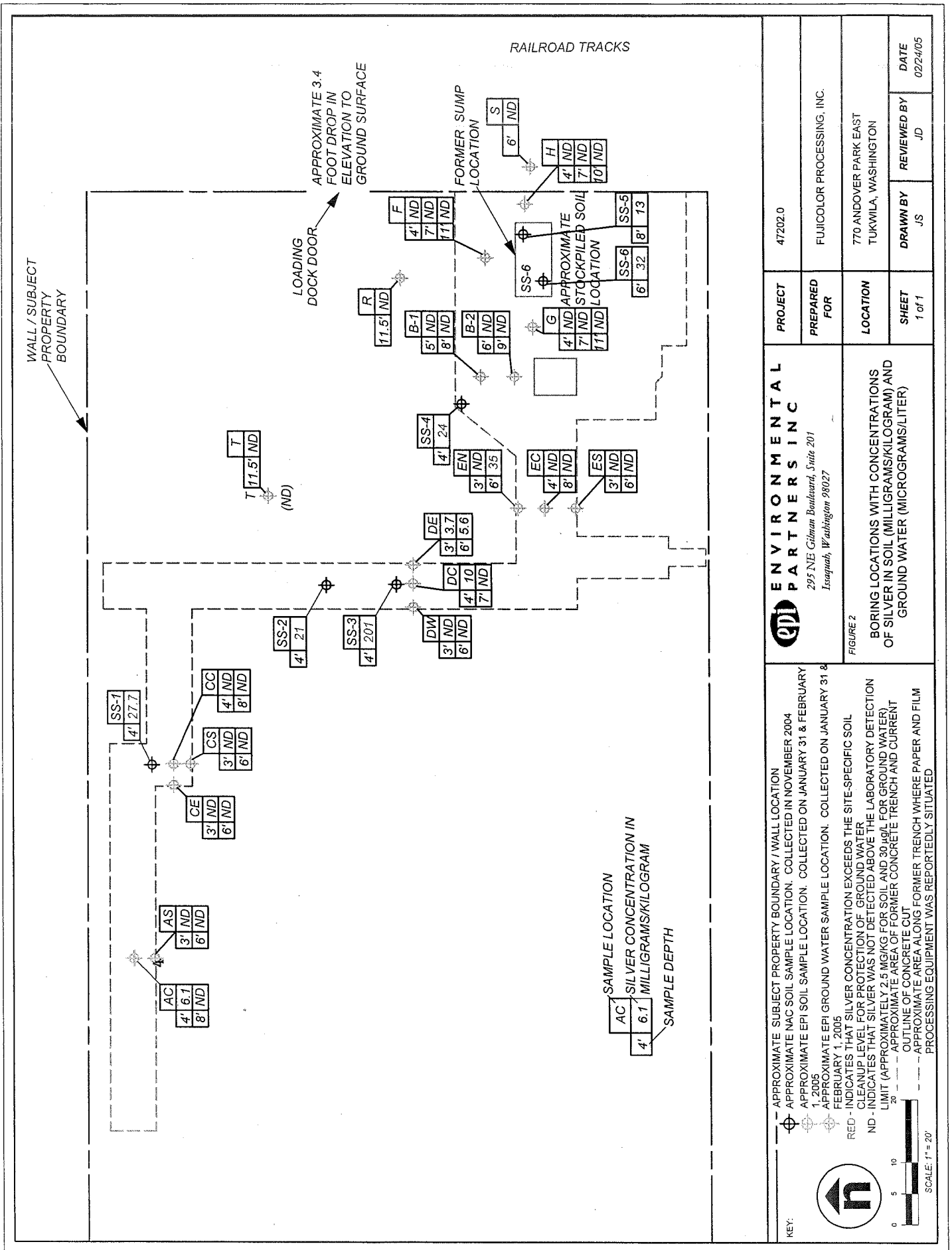
**ENVIRONMENTAL
PARTNERS INC**

295 NE Gilman Boulevard, Suite 201
Issaquah, Washington 98027

FIGURE 1

GENERAL VICINITY MAP

PROJECT	47202.0			
PREPARED FOR	FUJICOLOR PROCESSING			
LOCATION	770 ANDOVER PARK EAST TUKWILA, WASHINGTON			
SHEET	DRAWN BY	REVIEWED BY	DATE	
1 of 1	JS	JD	2/24/05	



<p>KEY:</p> <p> APPROXIMATE SUBJECT PROPERTY BOUNDARY / WALL LOCATION APPROXIMATE NAC SOIL SAMPLE LOCATION. COLLECTED IN NOVEMBER 2004 APPROXIMATE EPI SOIL SAMPLE LOCATION. COLLECTED ON JANUARY 31 & FEBRUARY 1, 2005 APPROXIMATE EPI GROUND WATER SAMPLE LOCATION. COLLECTED ON JANUARY 31 & FEBRUARY 1, 2005 </p> <p> RED - INDICATES THAT SILVER CONCENTRATION EXCEEDS THE SITE-SPECIFIC SOIL CLEANUP LEVEL FOR PROTECTION OF GROUND WATER ND - INDICATES THAT SILVER WAS NOT DETECTED ABOVE THE LABORATORY DETECTION LIMIT (APPROXIMATELY 2.5 MG/KG FOR SOIL AND 30 µg/L FOR GROUND WATER) --- (APPROXIMATE AREA OF FORMER CONCRETE TRENCH AND CURRENT OUTLINE OF CONCRETE CUT --- APPROXIMATE AREA ALONG FORMER TRENCH WHERE PAPER AND FILM PROCESSING EQUIPMENT WAS REPORTEDLY SITUATED </p> <p> SCALE: 1" = 20' </p>	<p>ENVIRONMENTAL PARTNERS INC. 295 NE Gilman Boulevard, Suite 201 Issaquah, Washington 98027</p>	<p>PROJECT 47202.0</p> <p>PREPARED FOR FUJICOLOR PROCESSING, INC.</p>
<p>LOCATION</p> <p>770 ANDOVER PARK EAST TUKWILA, WASHINGTON</p>	<p>FIGURE 2</p> <p>BORING LOCATIONS WITH CONCENTRATIONS OF SILVER IN SOIL (MILLIGRAMS/KILOGRAM) AND GROUND WATER (MICROGRAMS/LITER)</p>	<p>DATE 02/24/05</p> <p>REVIEWED BY JD</p> <p>DRAWN BY JS</p> <p>SHEET 1 of 1</p>