

Building	Sample ID	Layer	Sample Description	Material Location	AHERA Classification	Percent (%) Asbestos	Asbestos Type
Powerhouse		2	White chalky material with paper	Walls in upper level entry way	Misc.		None Detected
Powerhouse	JCPH-6-02	1	White compacted powdery material with paint	Walls in upper level entry way	Surf.		None Detected
Powerhouse		2	White chalky material with paper	Walls in upper level entry way	Misc.		None Detected
Powerhouse	JCPH-6-03	1	White compacted powdery material with paint	Walls in upper level entry way	Surf.		None Detected
Powerhouse		2	White chalky material with paper	Walls in upper level entry way	Misc.		None Detected
Powerhouse	JCPH-7-01	1	Off-white rubbery material with paint	Entry into switchgear room, associated with HVAC system	Misc.		None Detected
Powerhouse	JCPH-8-01	1	Brown sticky material with paint	Entry into upper level of Powerhouse (interior and exterior of door)	Misc.	3%	Chrysotile
Powerhouse	JCPH-8-02	1	White crumbly material with paint	Entry into upper level of Powerhouse (interior and exterior of door)	Misc.	6%	Chrysotile
Powerhouse		2	Brown sticky material	Entry into upper level of Powerhouse (interior and exterior of door)	Misc.	3%	Chrysotile
Powerhouse	JCPH-9-01	1	Off-white brittle material	Concrete pad/roof top side of Powerhouse	Misc.		None Detected
Residence 1	JCR1-10-01	1	Gray crumbly material	Around vent in bathroom	Misc.		None Detected
Residence 1	JCR1-1-01	1	White compacted powdery material with paint	Walls throughout	Surf.		None Detected
Residence 1		2	White chalky material with paper	Walls throughout	Misc.		None Detected
Residence 1	JCR1-1-02	1	White compacted powdery material with paint	Walls throughout	Surf.		None Detected
Residence 1		2	White chalky material with paper	Walls throughout	Misc.		None Detected
Residence 1	JCR1-1-03	1	White compacted powdery material with paint	Walls throughout	Surf.		None Detected

*Confirmed by layer via PLM Point Count at 1000 points; HSA: Material that is uniform in color, texture, general appearance, and construction and application date; Surf.: Surfacing material per AHERA; TSI: Thermal system insulation per AHERA; Misc.: Miscellaneous material per AHERA; Layers in bolded text are asbestos-containing

Table 2: Asbestos Sample Results by Layer							
Building	Sample ID	Layer	Sample Description	Material Location	AHERA Classification	Percent (%) Asbestos	Asbestos Type
Residence 1		2	White chalky material with paper	Walls throughout	Misc.		None Detected
Residence 1	JCR1-1-04	1	White compacted powdery material with paint	Walls throughout	Surf.		None Detected
Residence 1		2	White chalky material with paper	Walls throughout	Misc.		None Detected
Residence 1	JCR1-1-05	1	White compacted powdery material with paint	Walls throughout	Surf.		None Detected
Residence 1		2	White chalky material with paper	Walls throughout	Misc.		None Detected
Residence 1	JCR1-11-01	1	White compacted powdery material with paint	Walls throughout	Surf.		None Detected
Residence 1		2	White chalky material with paper	Walls throughout	Misc.		None Detected
Residence 1	JCR1-11-02	1	White compacted powdery material with paint	Walls throughout	Surf.		None Detected
Residence 1		2	White chalky material with paper	Walls throughout	Misc.		None Detected
Residence 1	JCR1-11-03	1	White compacted powdery material with paint	Walls throughout	Surf.		None Detected
Residence 1		2	White compacted powdery material with paper	Walls throughout	Misc.		None Detected
Residence 1		3	White chalky material with paper	Walls throughout	Misc.		None Detected
Residence 1	JCR1-12-01	1	Black fibrous material	Underneath corrugated metal roof throughout	Misc.		None Detected
Residence 1	JCR1-12-02	1	Black fibrous material	Underneath corrugated metal roof throughout	Misc.		None Detected
Residence 1	JCR1-13-01	1	Black sticky material	Base of wood siding throughout exterior	Misc.		None Detected
Residence 1		2	Gray brittle material with paint	Base of wood siding throughout exterior	Misc.		None Detected

*Confirmed by layer via PLM Point Count at 1000 points; HSA: Material that is uniform in color, texture, general appearance, and construction and application date; Surf.: Surfacing material per AHERA; TSI: Thermal system insulation per AHERA; Misc.: Miscellaneous material per AHERA; Layers in bolded text are asbestos-containing

Building	Sample ID	Layer	Sample Description	Material Location	AHERA Classification	Percent (%) Asbestos	Asbestos Type
Residence 1	JCR1-13-02	1	Black sticky material	Base of wood siding throughout exterior	Misc.		None Detected
Residence 1	JCR1-14-01	1	Off-white sandy brittle material	At interface between garage and driveway	Misc.		None Detected
Residence 1	JCR1-14-02	1	Off-white sandy brittle material	At interface between garage and driveway	Misc.		None Detected
Residence 1	JCR1-2-01	1	White compacted powdery material with paint	Ceilings throughout	Surf.		None Detected
Residence 1	JCR1-2-02	1	White compacted powdery material with paint	Ceilings throughout	Surf.		None Detected
Residence 1	JCR1-2-03	1	White compacted powdery material with paint	Ceilings throughout	Surf.	0.2%*	Chrysotile
Residence 1	JCR1-2-04	1	White compacted powdery material with paint	Ceilings throughout	Surf.	<0.1%*	Chrysotile
Residence 1	JCR1-2-05	1	White compacted powdery material with paint	Ceilings throughout	Surf.	0.3%*	Chrysotile
Residence 1	JCR1-3-01	1	White rubbery material with debris	At base of french doors in dining room	Misc.		None Detected
Residence 1		2	Off-white sheet vinyl	At base of french doors in dining room	Misc.		None Detected
Residence 1	JCR1-4-01	1	Black rubbery material	Walls in dining room and kitchen	Misc.		None Detected
Residence 1		2	Yellow firm mastic	Walls in dining room and kitchen	Misc.		None Detected
Residence 1		3	White compacted powdery material with paint	Walls throughout (HSA JCR1-2)	Misc.		None Detected
Residence 1	JCR1-4-02	1	Black rubbery material	Walls in dining room and kitchen	Misc.		None Detected
Residence 1		2	Yellow firm mastic with paint	Walls in dining room and kitchen	Misc.		None Detected
Residence 1	JCR1-5-01	1	Tan sheet vinyl	Flooring in dining room and kitchen	Misc.		None Detected

*Confirmed by layer via PLM Point Count at 1000 points; HSA: Material that is uniform in color, texture, general appearance, and construction and application date; Surf.: Surfacing material per AHERA; TSI: Thermal system insulation per AHERA; Misc.: Miscellaneous material per AHERA; Layers in bolded text are asbestos-containing

Table 2: Asbestos Sample Results by Layer							
Building	Sample ID	Layer	Sample Description	Material Location	AHERA Classification	Percent (%) Asbestos	Asbestos Type
Residence 1		2	Yellow sticky mastic	Flooring in dining room and kitchen	Misc.		None Detected
Residence 1	JCR1-5-02	1	Tan sheet vinyl	Flooring in dining room and kitchen	Misc.		None Detected
Residence 1		2	Yellow sticky mastic	Flooring in dining room and kitchen	Misc.		None Detected
Residence 1	JCR1-6-01	1	Gray crumbly material	Kitchen sink	Misc.		None Detected
Residence 1	JCR1-7-01	1	Off-white crumbly material	Kitchen sink	Misc.		None Detected
Residence 1		2	Black sticky material	Kitchen sink	Misc.		None Detected
Residence 1	JCR1-8-01	1	Black fibrous material	Above rafters in attic, throughout	Misc.		None Detected
Residence 1	JCR1-9-01	1	Tan sheet vinyl	Flooring in bathroom off of bedroom	Misc.		None Detected
Residence 1		2	Clear sticky adhesive	Flooring in bathroom off of bedroom	Misc.		None Detected
Residence 1		3	Gray crumbly material	Flooring in bathroom off of bedroom	Misc.		None Detected
Residence 1		4	Off-white sheet vinyl	Flooring in bathroom off of bedroom	Misc.		None Detected
Residence 1		5	Gray fibrous material with hard yellow mastic	Flooring in bathroom off of bedroom	Misc.		None Detected
Residence 2	JCR2-1-01	1	Black asphaltic fibrous material with granules	Shed roofing, throughout	Misc.		None Detected
Residence 2		2	Black asphaltic fibrous felt	Shed roofing, throughout	Misc.		None Detected
Residence 2	JCR2-1-02	1	Black asphaltic fibrous material with granules	Shed roofing, throughout	Misc.		None Detected
Residence 2		2	Black asphaltic fibrous felt	Shed roofing, throughout	Misc.		None Detected

*Confirmed by layer via PLM Point Count at 1000 points; HSA: Material that is uniform in color, texture, general appearance, and construction and application date; Surf.: Surfacing material per AHERA; TSI: Thermal system insulation per AHERA; Misc.: Miscellaneous material per AHERA; Layers in bolded text are asbestos-containing

Table 2: Asbestos Sample Results by Layer							
Building	Sample ID	Layer	Sample Description	Material Location	AHERA Classification	Percent (%) Asbestos	Asbestos Type
Residence 2	JCR2-2-01	1	White fibrous material	Underneath exterior wood siding, throughout	Misc.		None Detected
Residence 2	JCR2-2-02	1	White fibrous material	Underneath exterior wood siding, throughout	Misc.		None Detected
Residence 2	JCR2-3-01	1	Black brittle asphaltic material	Driveway	Misc.		None Detected
Residence 2	JCR2-4-01	1	Black soft asphaltic material	Driveway	Misc.		None Detected
Residence 2	JCR2-4-02	1	Black soft asphaltic material	Driveway	Misc.		None Detected
Spillway Control Center Building	JCSW-1-01	1	Gray brittle cementitious material	Support concrete associated with Spillway Control Center Building	Misc.		None Detected
Spillway Control Center Building	JCSW-2-01	1	Black brittle asphaltic material	Associated with wood shoring on hill in front of Spillway Control Center Building	Misc.		None Detected
Spillway Control Center Building	JCSW-2-02	1	Black brittle asphaltic material	Associated with wood shoring on hill in front of Spillway Control Center Building	Misc.		None Detected
Timber Bridge	JCWB-1-01	1	Brittle orange material	Throughout Timber Bridge	Misc.		None Detected
Timber Bridge	JCWB-1-02	1	Brittle orange material	Throughout Timber Bridge	Misc.		None Detected
Timber Bridge		2	Brown woody material	Throughout Timber Bridge	Misc.		None Detected
Vehicle Storage Shed	JCVS-1-01	1	Yellow fibrous material with mastic and vinyl surface	Insulation throughout	TSI		None Detected
Vehicle Storage Shed	JCVS-1-02	1	Yellow fibrous material with mastic and vinyl surface	Insulation throughout	TSI		None Detected
Vehicle Storage Shed	JCVS-1-03	1	Yellow fibrous material with mastic and vinyl surface	Insulation throughout	TSI		None Detected
Vehicle Storage Shed	JCVS-2-01	1	Gray crumbly material	Expansion joints throughout interior flooring	Misc.		None Detected
Vehicle Storage Shed		2	Gray soft elastic material	Expansion joints throughout interior flooring	Misc.		None Detected

*Confirmed by layer via PLM Point Count at 1000 points; HSA: Material that is uniform in color, texture, general appearance, and construction and application date; Surf.: Surfacing material per AHERA; TSI: Thermal system insulation per AHERA; Misc.: Miscellaneous material per AHERA; Layers in bolded text are asbestos-containing

Building	Sample ID	Layer	Sample Description	Material Location	AHERA Classification	Percent (%) Asbestos	Asbestos Type
Vehicle Storage Shed		3	Dark gray brittle material	Expansion joints throughout interior flooring	Misc.		None Detected
Vehicle Storage Shed	JCVS-2-02	1	Gray soft elastic material	Expansion joints throughout interior flooring	Misc.		None Detected
Vehicle Storage Shed		2	Gray brittle material	Expansion joints throughout interior flooring	Misc.		None Detected
Vehicle Storage Shed		3	Brown brittle material	Expansion joints throughout interior flooring	Misc.		None Detected
Vehicle Storage Shed	JCVS-3-01	1	White soft material	Exterior siding	Misc.		None Detected
Vehicle Storage Shed	JCVS-4-01	1	Black asphaltic fibrous felt	Roof of entry way, under corrugated roof	Misc.		None Detected
Vehicle Storage Shed	JCVS-4-02	1	Black asphaltic fibrous felt	Roof of entry way, under corrugated roof	Misc.		None Detected
Vehicle Storage Shed	JCVS-5-01	1	Black asphaltic material	Seams around exterior perimeter - at roll-up doors	Misc.		None Detected
Vehicle Storage Shed	JCVS-5-02	1	Black asphaltic material	Seams around exterior perimeter - at roll-up doors	Misc.		None Detected
Vehicle Storage Shed	JCVS-6-01	1	Black asphaltic soft material	Penetrations around exterior perimeter	Misc.		None Detected
Vehicle Storage Shed	JCVS-6-02	1	Black asphaltic soft material	Penetrations around exterior perimeter	Misc.		None Detected
Warehouse	JCWH-1-01	1	Black asphaltic material with gray surface	Exterior interface between metal siding and concrete foundation	Misc.	10%	Chrysotile
Warehouse	JCWH-1-02	1	Black asphaltic material with gray surface	Exterior interface between metal siding and concrete foundation	Misc.	14%	Chrysotile
Warehouse	JCWH-2-01	1	Black asphaltic mastic with mesh and paper	Old insulation throughout interior	Misc.		None Detected
Warehouse		2	Yellow fibrous material	Old insulation throughout interior	TSI		None Detected
Warehouse	JCWH-2-02	1	Black asphaltic mastic with mesh and paper	Old insulation throughout interior	Misc.		None Detected

*Confirmed by layer via PLM Point Count at 1000 points; HSA: Material that is uniform in color, texture, general appearance, and construction and application date; Surf.: Surfacing material per AHERA; TSI: Thermal system insulation per AHERA; Misc.: Miscellaneous material per AHERA; Layers in bolded text are asbestos-containing

Building	Sample ID	Layer	Sample Description	Material Location	AHERA Classification	Percent (%) Asbestos	Asbestos Type
Warehouse		2	Yellow fibrous material	Old insulation throughout interior	Misc.		None Detected
Warehouse	JCWH-2-03	1	Black asphaltic mastic with mesh and paper	Old insulation throughout interior	Misc.		None Detected
Warehouse		2	Yellow fibrous material	Old insulation throughout interior	Misc.		None Detected
Warehouse	JCWH-3-01	1	Black asphaltic material	At uneven expansion joints, concrete floor throughout interior	Misc.		None Detected
Warehouse	JCWH-3-02	1	Black asphaltic material	At uneven expansion joints, concrete floor throughout interior	Misc.		None Detected
Warehouse	JCWH-4-01	1	Gray brittle material	At uneven expansion joints, concrete floor throughout interior	Misc.		None Detected
Warehouse	JCWH-5-01	1	Off-white putty material	At metal seems around interior roll - up door (potentially at all seams, but more was not visible during inspection)	Misc.	4%	Chrysotile
Warehouse	JCWH-6-01	1	Tan fibrous material with paper	Debris on ground - appeared to be deteriorated from ceiling above	Misc.		None Detected
Warehouse	JCWH-6-02	1	Tan fibrous material with paper	Debris on ground - appeared to be deteriorated from ceiling above	Misc.		None Detected
Warehouse	JCWH-6-03	1	White fibrous material	Debris on ground - appeared to be deteriorated from ceiling above	Misc.		None Detected
Warehouse		2	Tan fibrous material	Debris on ground - appeared to be deteriorated from ceiling above	Misc.		None Detected
Warehouse		3	Black asphaltic material	Debris on ground - appeared to be deteriorated from ceiling above	Misc.		None Detected

*Confirmed by layer via PLM Point Count at 1000 points; HSA: Material that is uniform in color, texture, general appearance, and construction and application date; Surf.: Surfacing material per AHERA; TSI: Thermal system insulation per AHERA; Misc.: Miscellaneous material per AHERA; Layers in bolded text are asbestos-containing

Table 4-3 Lead Paint Sample Results

Table 4: Tabulated Analytical Results for Each Lead Paint Sample					
Building	Sample ID	Description	Substrate	Location	Results in (mg/kg)
Canal Headgate	JCCH-Pb1-01	Tan/silver/orange paint	Metal	Diversion piping	350,000
Communication Building	JCCB-Pb1-01	Yellow paint	Metal	Exterior metal tread walkway at entrance	<44
Communication Building	JCCB-Pb2-01	Tan paint	Metal	Exterior metal trim	140
Communication Building	JCCB-Pb3-01	White paint	Metal	Throughout interior metal siding	<200
Fire Protection Building	JCFP-Pb1-01	Red paint	Metal	Pump piping throughout interior	56
Fire Protection Building	JCFP-Pb2-01	Gray paint	Metal	Double doors at entrance	<49
Fire Protection Building	JCFP-Pb3-01	Red paint	Concrete	Exterior bollards	<63
HazMat Shed	JCHM-Pb1-01	Tan paint	Metal	Throughout exterior siding	65
Gate Control Communication Building	JCCG-Pb1-01	Tan paint	Metal	Exterior siding and equipment throughout	3,300
HazMat Shed	JCHM-Pb2-01	Tan paint	Metal	Throughout exterior siding of small shed next to HazMat Storage Shed	290,000
HazMat Shed	JCHM-Pb3-01	White paint	Concrete	Above ground concrete casings	<59
HazMat Shed	JCHM-Pb4-01	Silver/orange paint	Metal	Roof of small shed next to HazMat Storage Shed	220,000
HazMat Shed	JCHM-Pb5-01	Red paint	Metal	Throughout interior structural steel of HazMat Shed	560
Intake Structure	JCIS-Pb10-01	Gray paint on brown paint	Metal	Metal handrails on fish ladder bridge	19,000
Intake Structure	JCIS-Pb1-01	Yellow paint	Metal	Driveway block	<89
Intake Structure	JCIS-Pb11-01	Tan paint	Metal	Throughout exterior metal siding on reservoir level gage house	490
Intake Structure	JCIS-Pb2-01	Gray paint	Wood	Exterior underhang of Fish Screen House	740
Intake Structure	JCIS-Pb3-01	White paint	Concrete	Throughout interior walls of Fish Screen Building	120
Intake Structure	JCIS-Pb4-01	Green/silver paint	Metal	Throughout interior piping of Fish Screen Building	12,000

Table 4: Tabulated Analytical Results for Each Lead Paint Sample					
Building	Sample ID	Description	Substrate	Location	Results in (mg/kg)
Intake Structure	JCIS-Pb5-01	Gray paint	Metal	Interior mechanical of Fish Screen Building, on traveling water screens	68
Intake Structure	JCIS-Pb6-01	Silver/orange paint	Metal	Intake structural support	57,000
Intake Structure	JCIS-Pb7-01	Tan paint	Metal	Exterior siding of Fish Screen Building	<180
Intake Structure	JCIS-Pb8-01	Brown paint	Wood	Exterior walkway decking around Fish Screen Building, lower section directly above water	<51
Intake Structure	JCIS-Pb9-01	Silver paint	Metal	Metal screens on exterior of Fish Screen Building	74,000
Office Warehouse	JCOW-Pb1-01	White paint	Gypsum wallboard	Throughout interior walls of office spaces	<46
Office Warehouse	JCOW-Pb2-01	Gray paint	Wood	Wood floor throughout second floor	<59
Office Warehouse	JCOW-Pb3-01	White paint	Wood	Wood walls throughout second floor	<59
Office Warehouse	JCOW-Pb4-01	Yellow paint	Concrete	Associated with trip hazards in warehouse	<55
Office Warehouse	JCOW-Pb5-01	White paint	Wood	Walls in first floor warehouse	<56
Office Warehouse	JCOW-Pb6-01	White paint	Wood	Frames on first and second floor exterior windows	<52
Office Warehouse	JCOW-Pb7-01	Red paint	Metal	Exterior corrugated metal siding	<96
Outdoor Storage Area	JCBY-Pb1-01	Silver paint	Metal	Out of commission tank in outdoor storage area	15,000
Penstock	JCPS-Pb1-01	Tan paint on orange paint	Metal	Penstock piping	97,000
Powerhouse	JCPH-Pb1-01	White paint	CMU	CMU walls throughout	680
Powerhouse	JCPH-Pb2-01	Gray paint	Concrete	Floors throughout Powerhouse	180
Powerhouse	JCPH-Pb3-01	White paint	Concrete	Walls throughout Powerhouse	360
Powerhouse	JCPH-Pb4-01	Orange paint	Metal	Handrails throughout Powerhouse	100,000
Powerhouse	JCPH-Pb5-01	White paint	Concrete	Exterior walls throughout Powerhouse	<68
Powerhouse	JCPH-Pb6-01	Orange paint	Metal	Exterior handrails throughout	<140
Powerhouse	JCPH-Pb7-01	Silver paint	Metal	Exterior tracks top side of Powerhouse (roof)	21,000

Table 4: Tabulated Analytical Results for Each Lead Paint Sample					
Building	Sample ID	Description	Substrate	Location	Results in (mg/kg)
Pumphouse	JCPH-Pb1-01	Brown paint	Wood	Wood door to pumphouse	<60
Residence 1	JCRI-Pb1-01	Light beige paint	Gypsum wallboard	Interior walls throughout	<75
Residence 1	JCRI-Pb2-01	Light beige paint	Wood	Interior trim throughout	<60
Residence 1	JCRI-Pb7-01	Green paint	Wood	Exterior siding throughout	<53
Residence 1	JCRI-Pb8-01	Off-white paint	Wood	Exterior trim throughout	<46
Residence 1	JCRI-Pb9-01	Green paint	Concrete	Exterior concrete foundation	<52
Residence 2	JCR2-Pb1-01	Green paint	Wood	Exterior siding throughout	<58
Residence 2	JCR2-Pb2-01	White paint	Wood	Exterior trim throughout	<98
Spillway	JCSW-Pb1-01	Beige paint on concrete	Concrete	Spillway canal walls	2,200
Vehicle Storage Shed	JCVS-Pb1-01	Red paint	Metal	Structural steel throughout interior	<120
Vehicle Storage Shed	JCVS-Pb2-01	Tan paint	Metal	Door frames throughout Vehicle Storage	<51
Vehicle Storage Shed	JCVS-Pb3-01	White paint	Wood	Interior walls throughout	<58
Vehicle Storage Shed	JCVS-Pb4-01	Yellow paint	Concrete	Exterior bollards	150
Vehicle Storage Shed	JCVS-Pb5-01	Tan paint	Metal	Exterior corrugated metal siding	<57
Warehouse	JCWH-Pb1-01	Red paint	Metal	Interior structural support beams	15,000

<: Below the reporting limit

Table 4-4 Universal Waste Inventory

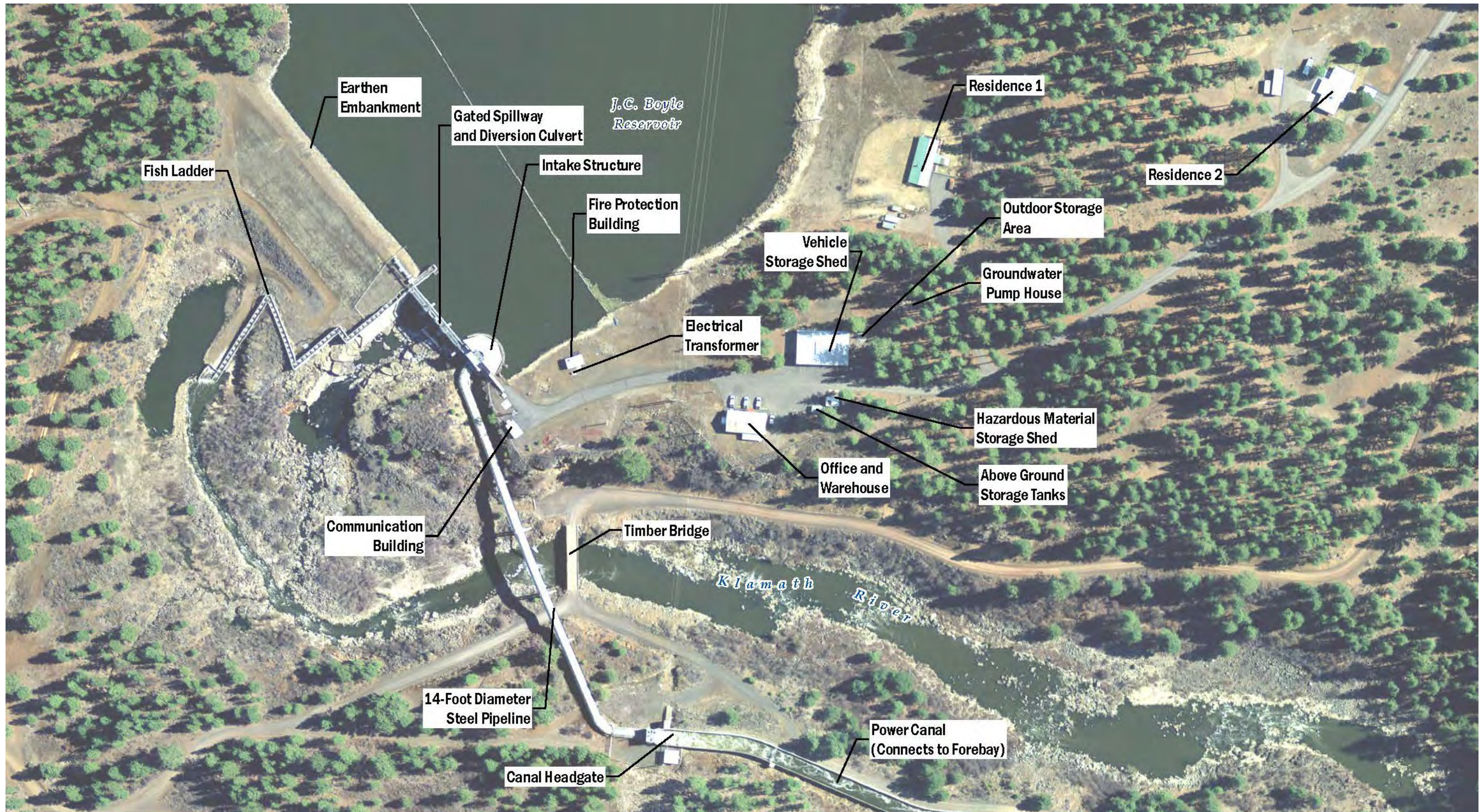
Table 4: Universal Waste Inventory	
Other Regulated Building Materials Description	Approximate Quantity
Mercury-containing fluorescent light tubes (4' length)	68
Mercury-containing fluorescent light tubes (6' length)	10
Mercury-containing fluorescent light tubes (8' length)	8
Magnetic light ballasts	50
HID lamps	39
Mercury-containing switches, controls, and recorders	None observed

Table 4-5 PCB-Caulking Sample Results

Table 5: PCB Caulking Results		
Sample Number and Description	Material Location	Samples Results in Parts Per Million (ppm)
Flexible gray expansion joint sealant	Powerhouse roof – at expansion joints	ND

ND: None Detected

APPENDIX A FIGURES

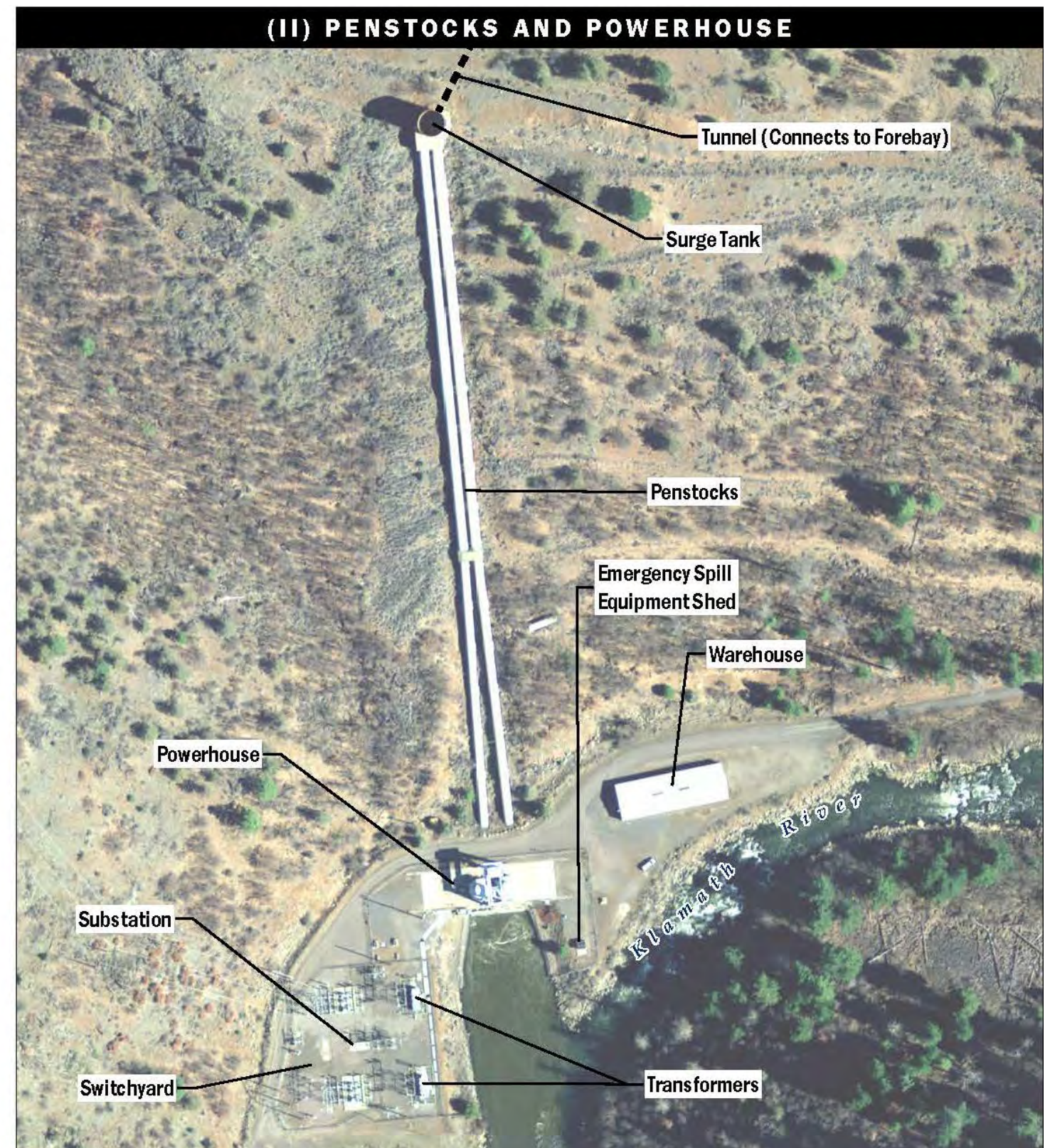
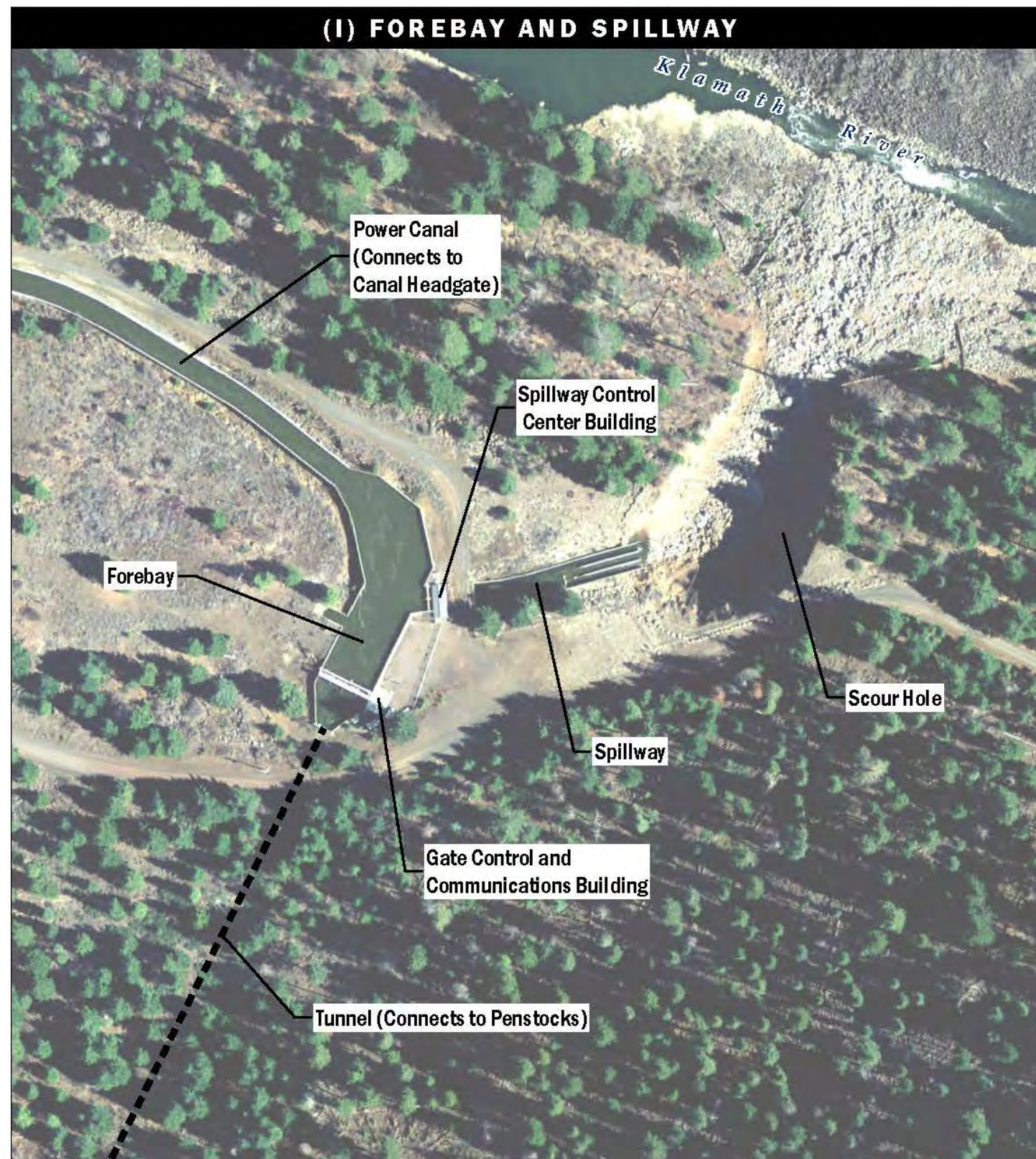


Job No. 60537920

AECOM

Figure 1
JC Boyle Dam
Aerial Site Photo

JC Boyle Dam
 Keno, OR

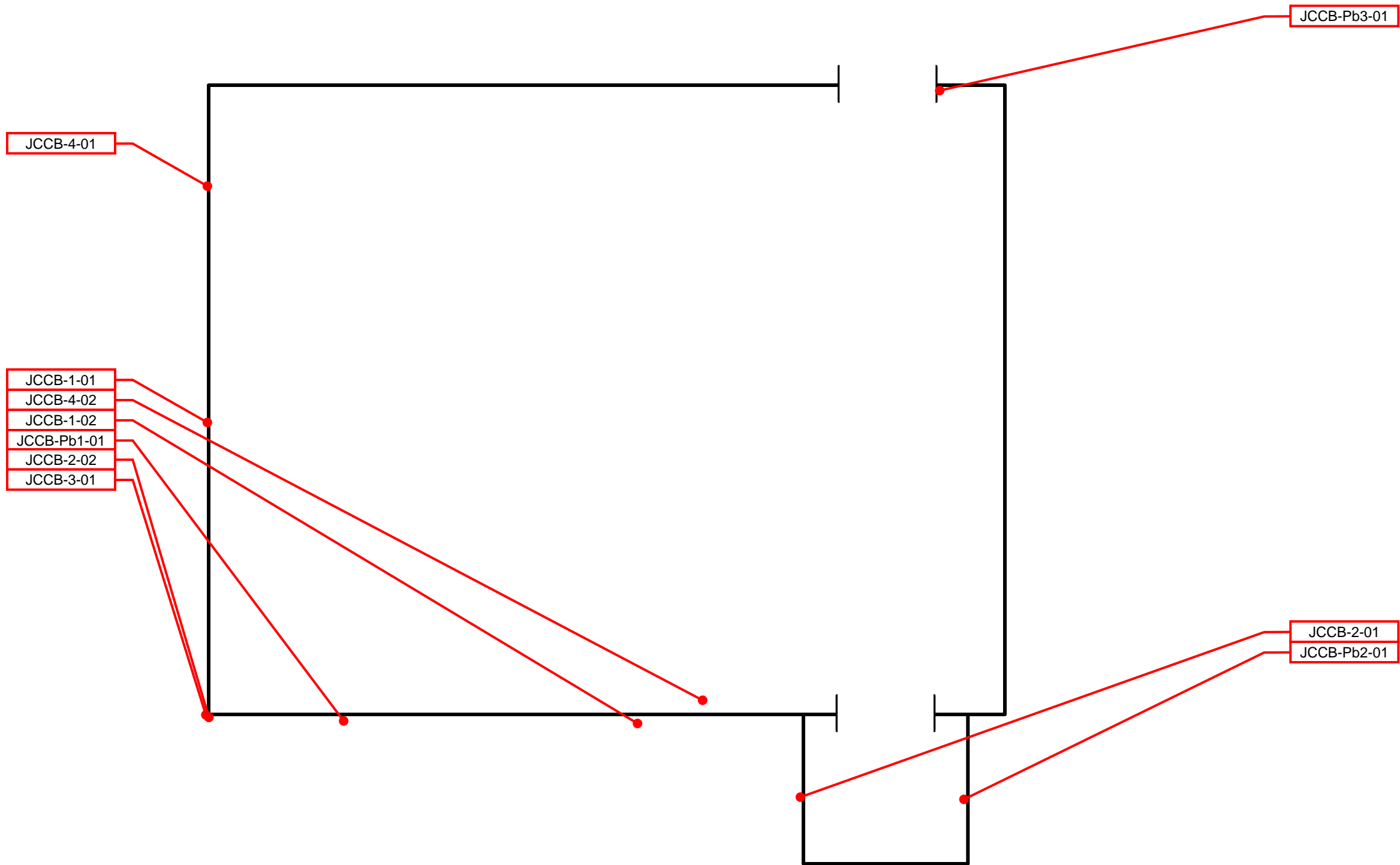


Job No. 60537920

AECOM

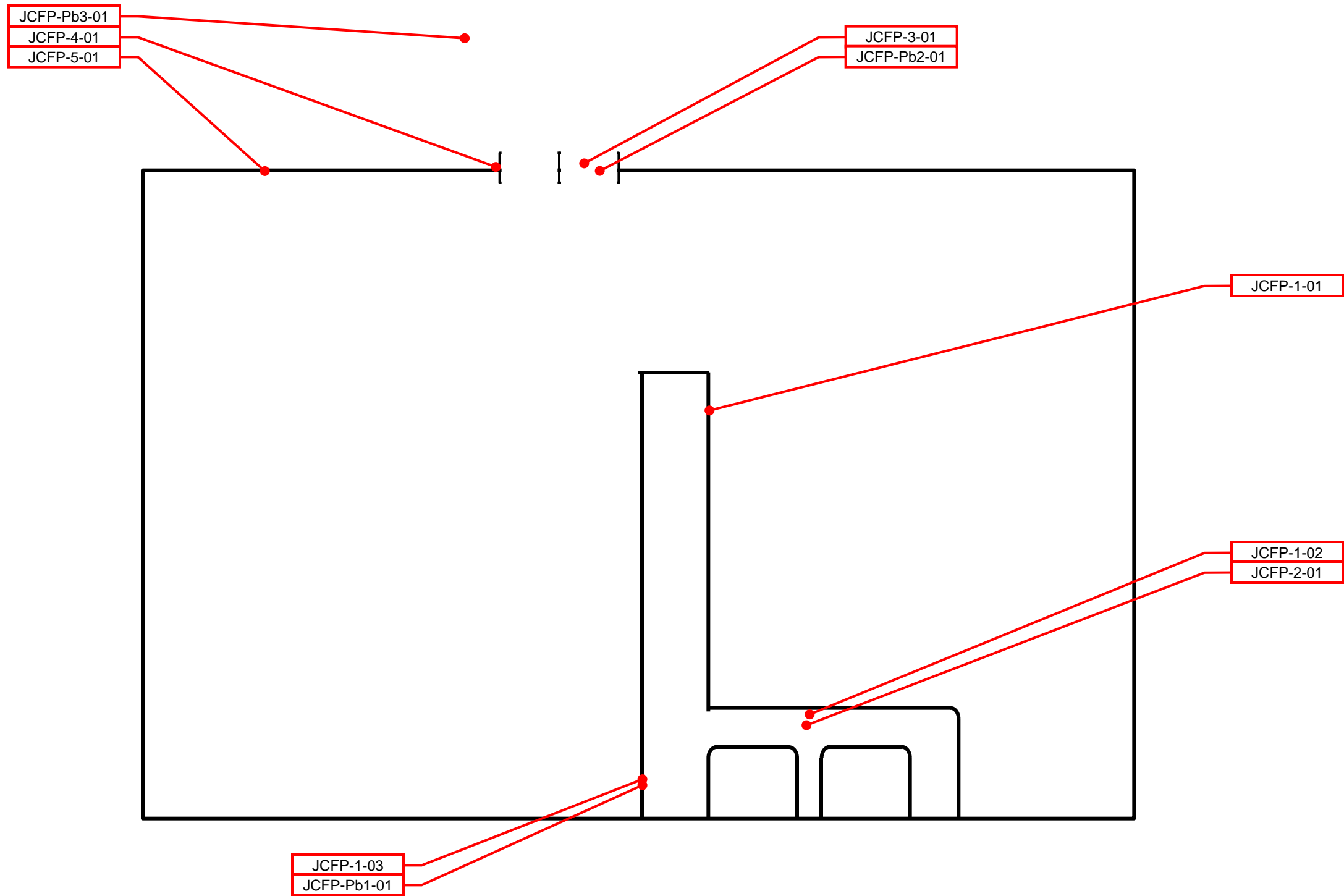
Figure 2
JC Boyle Dam
Aerial Site Photo

JC Boyle Dam
Keno, OR



Legend
JCCB – HSA# – ## = Asbestos sample location
JCCB – Pb# – ## = Lead paint sample location

Figure 3
Asbestos and Lead Sample Locations
Communications Building



Legend
 JCFP – HSA# – ## = Asbestos sample location
 JCFP – Pb# – ## = Lead paint sample location

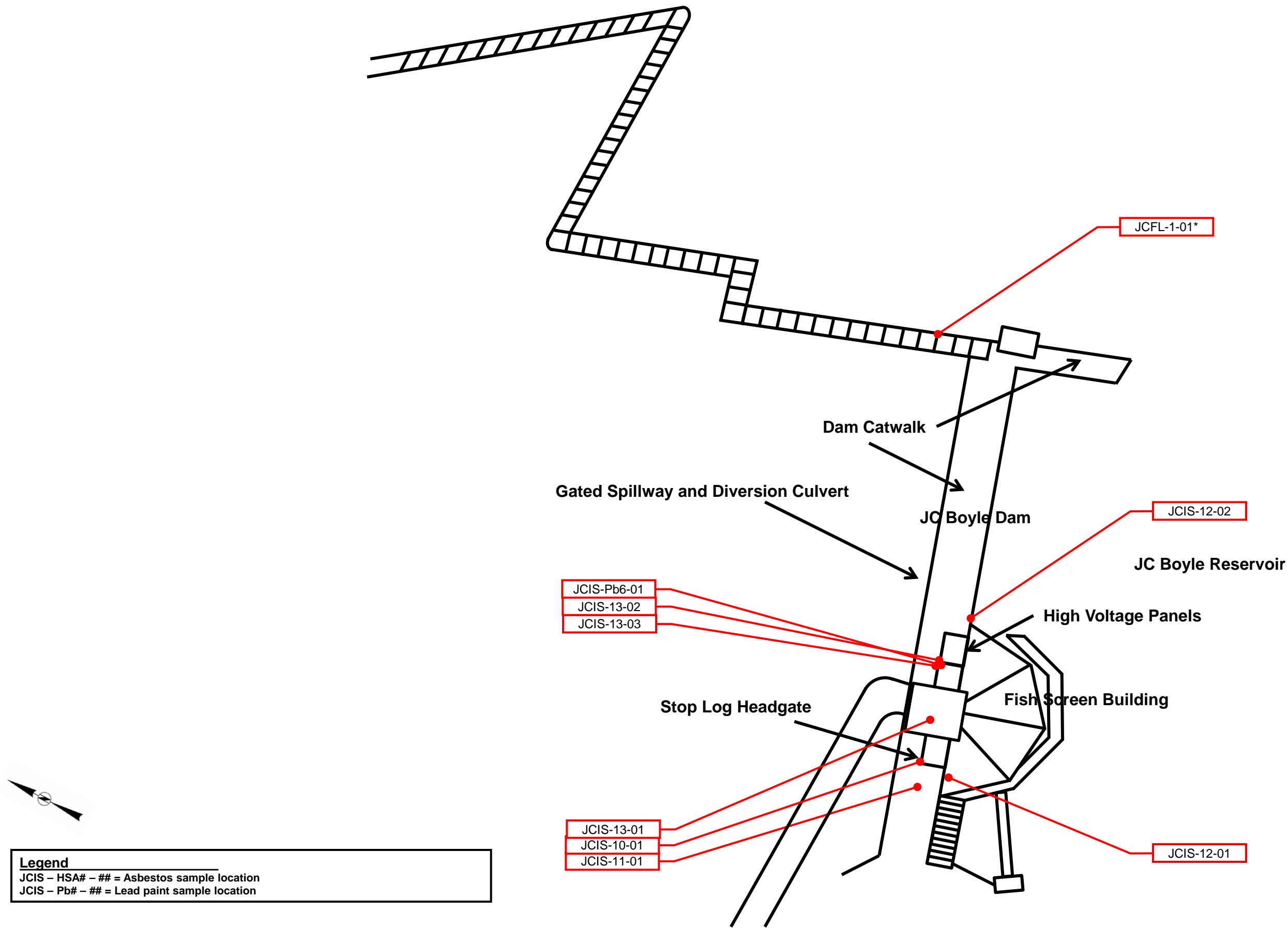
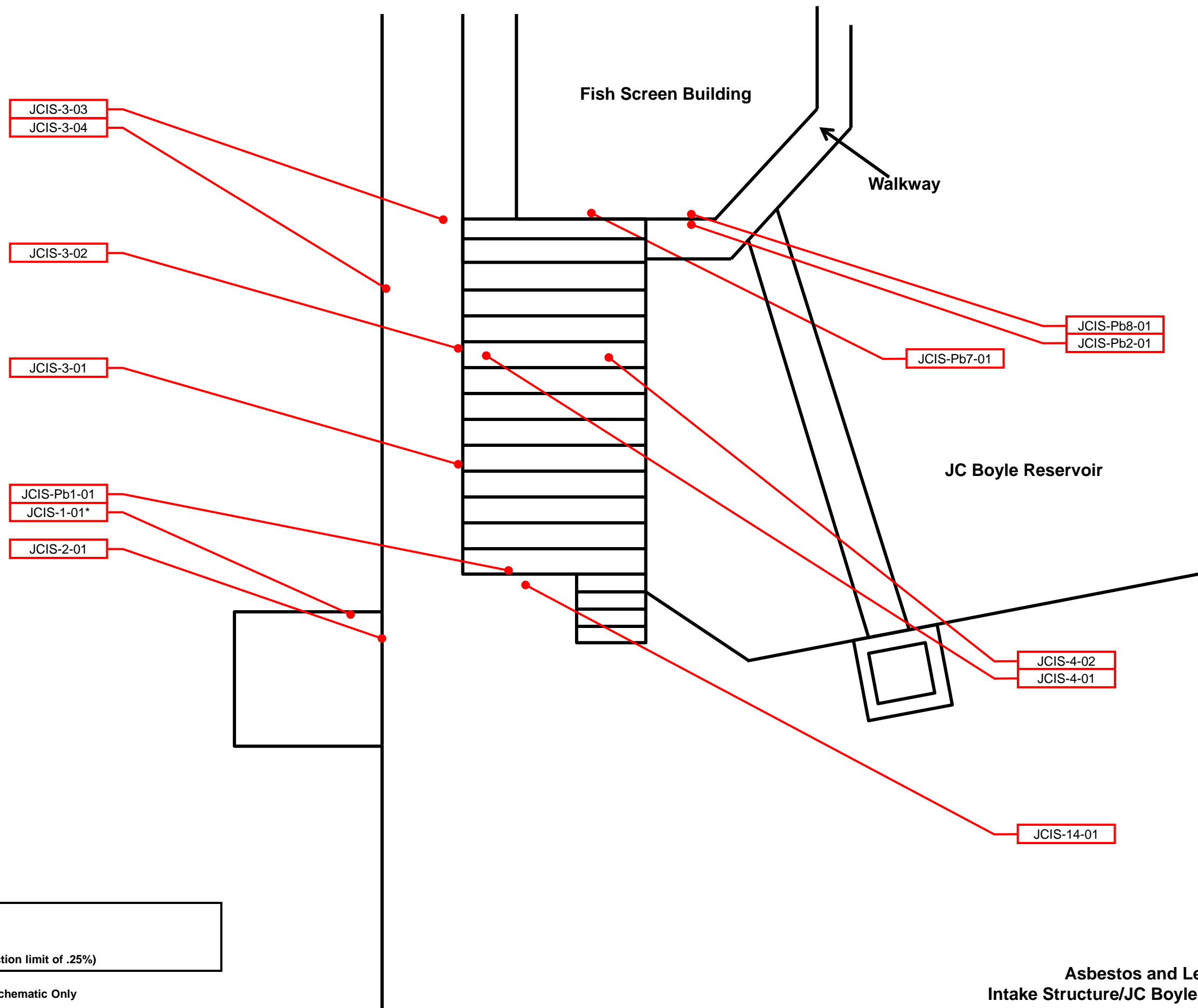


Figure 5
Asbestos and Lead Sample Locations
Intake Structure, Gated Spillway and Diversion Culvert, and Fish Ladder



Legend
 JCIS – HSA# – ## = Asbestos sample location
 JCIS – Pb# – ## = Lead paint sample location
 *Concrete sample analyzed via PLM CARB (Detection limit of .25%)

Job No. 60537920 Drawing Not to Scale – Schematic Only

Figure 6
Asbestos and Lead Sample Locations
Intake Structure/JC Boyle Dam – South Section



Legend
JCIS – HSA# – ## = Asbestos sample location
JCIS – Pb# – ## = Lead paint sample location

Job No. 60537920 Drawing Not to Scale – Schematic Only

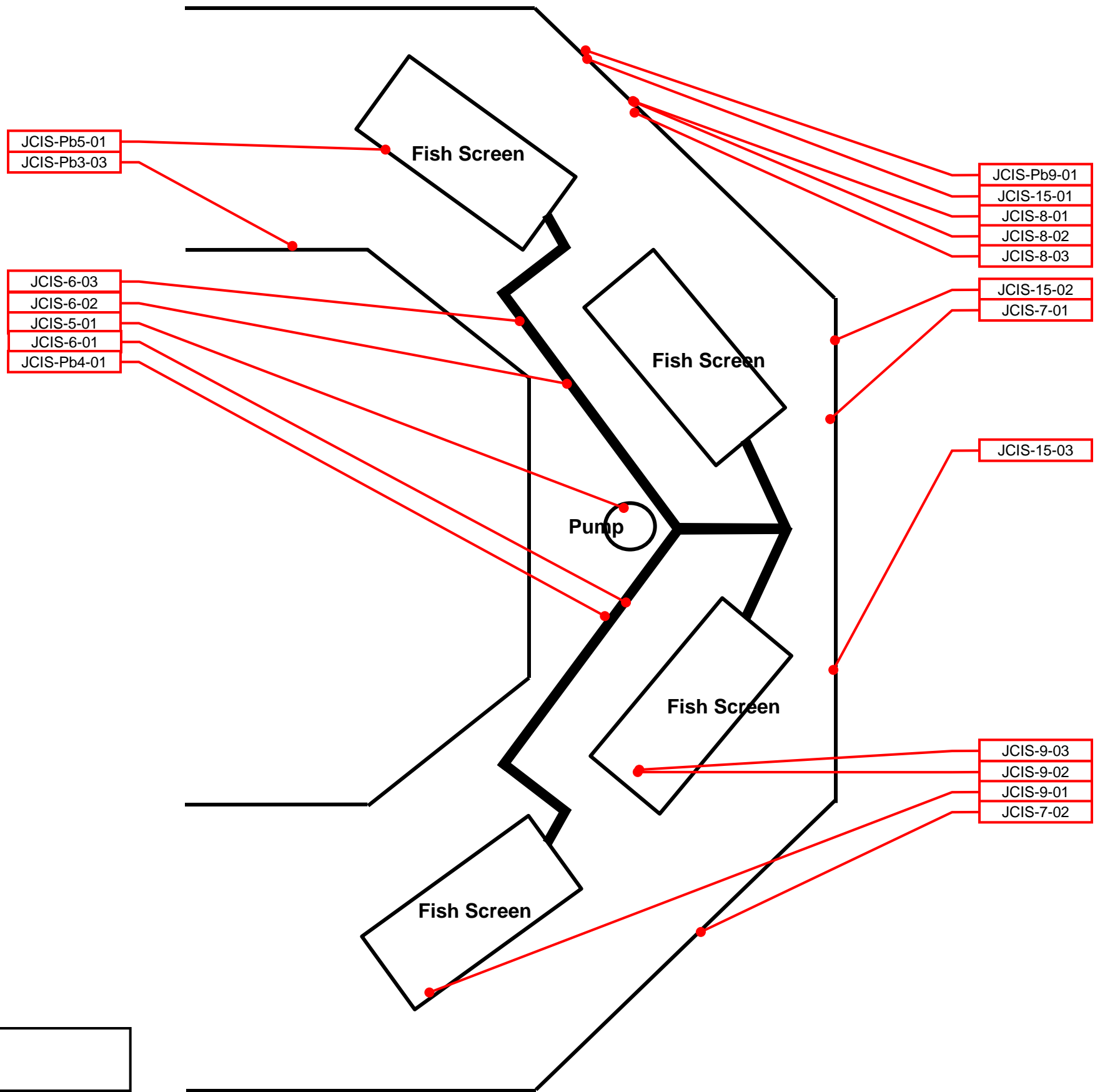


Figure 7
Asbestos and Lead Sample Locations
Intake Structure Fish Screen Building

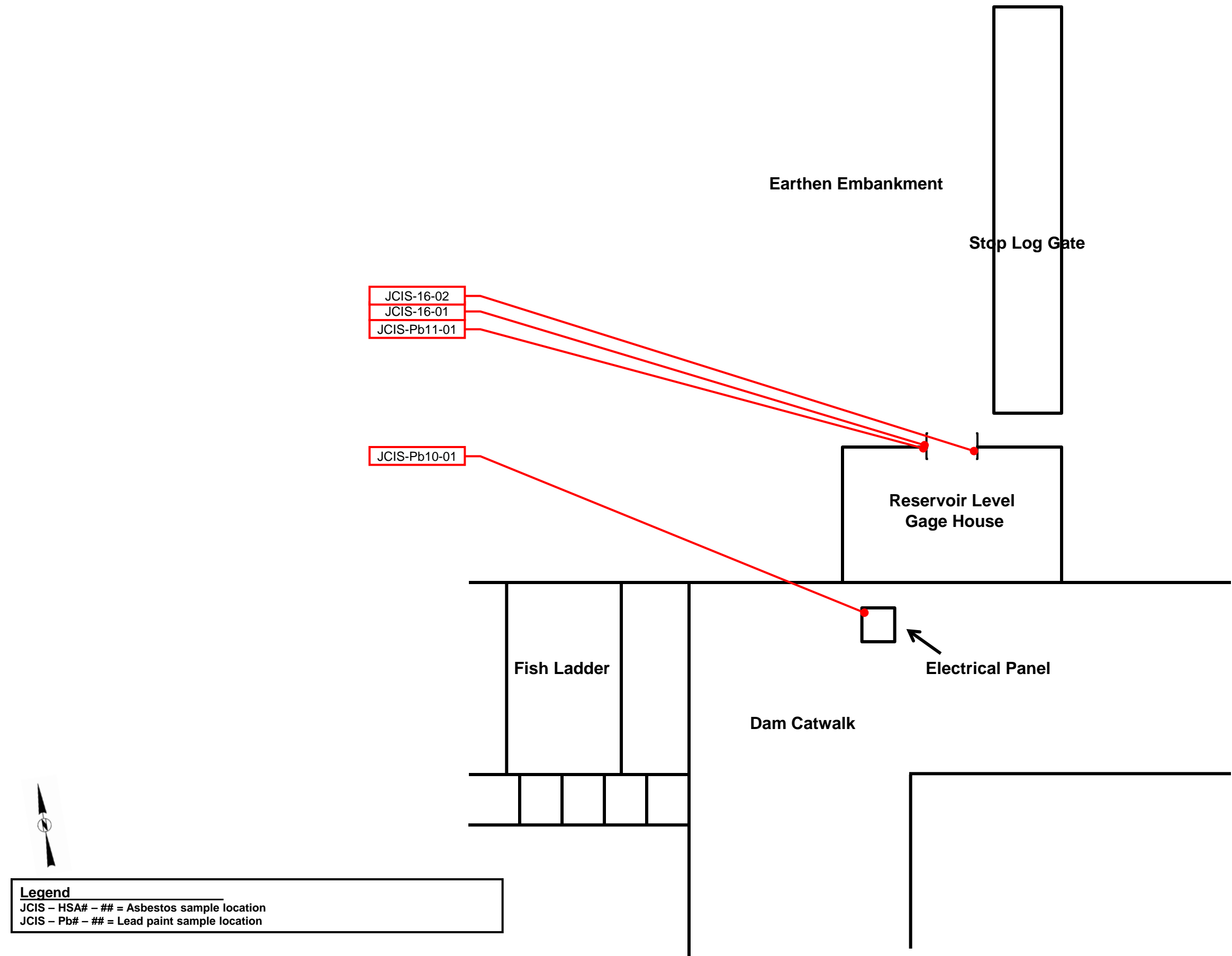
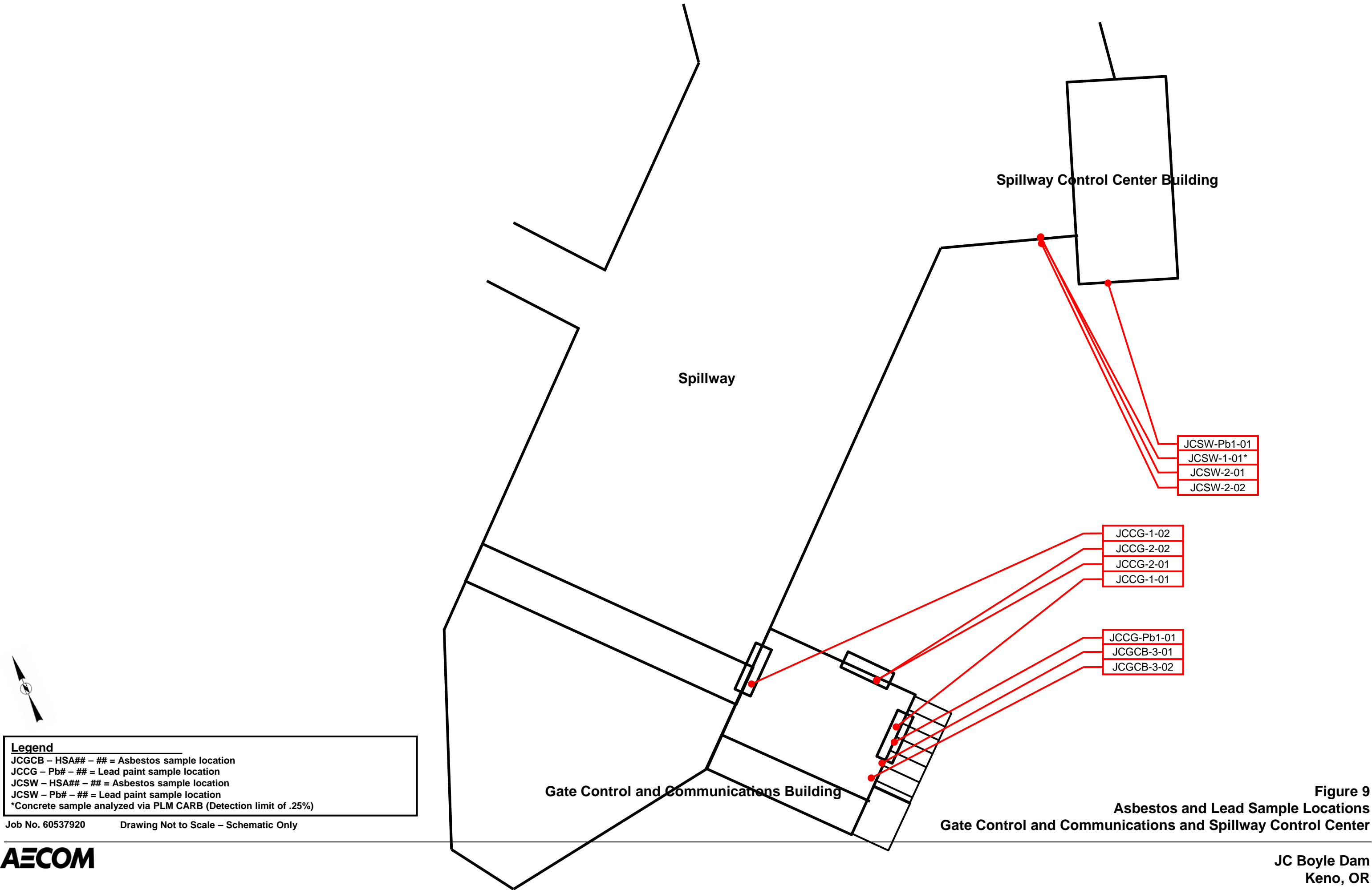


Figure 8
Asbestos and Lead Sample Locations
Intake Structure/JC Boyle Dam – North Section



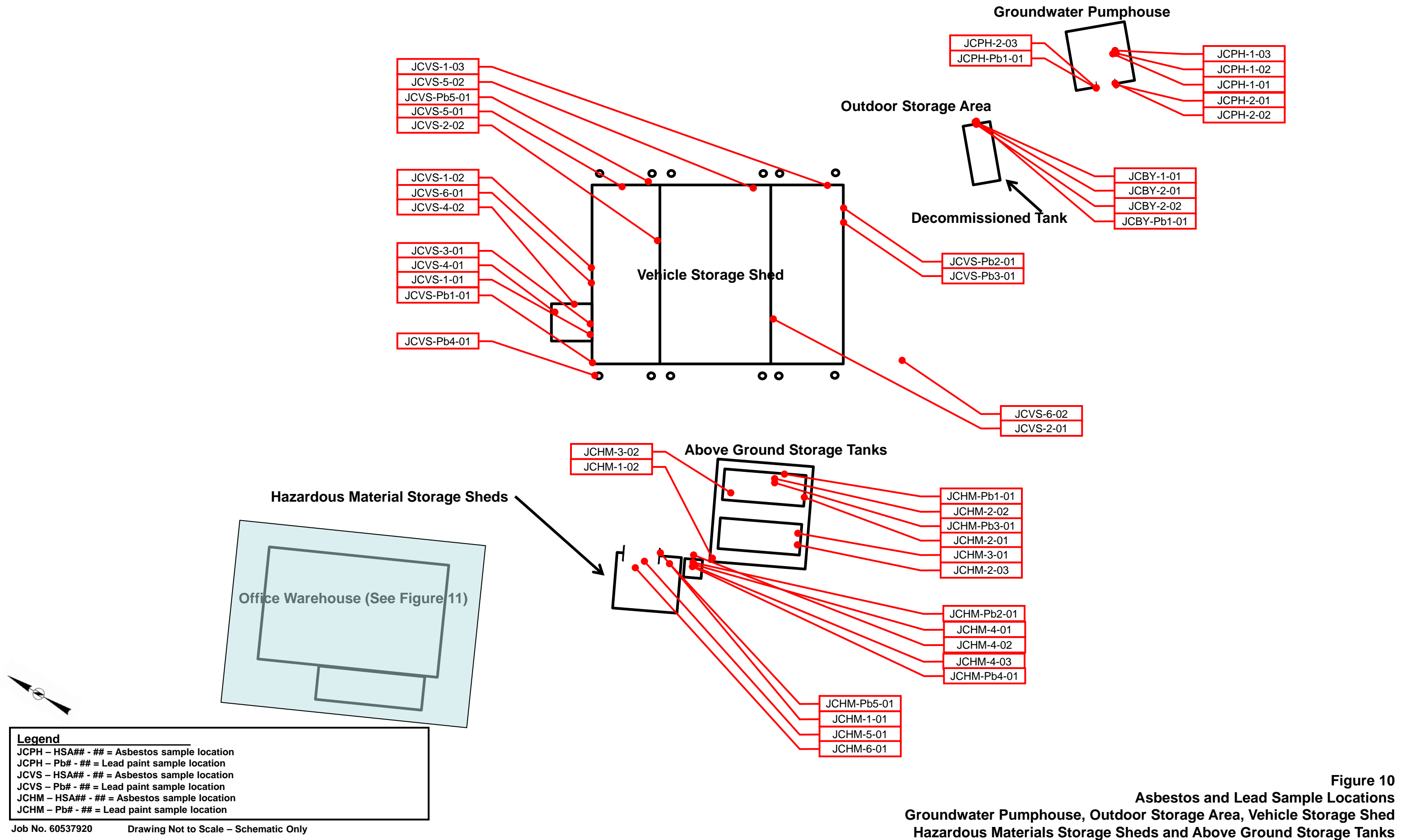
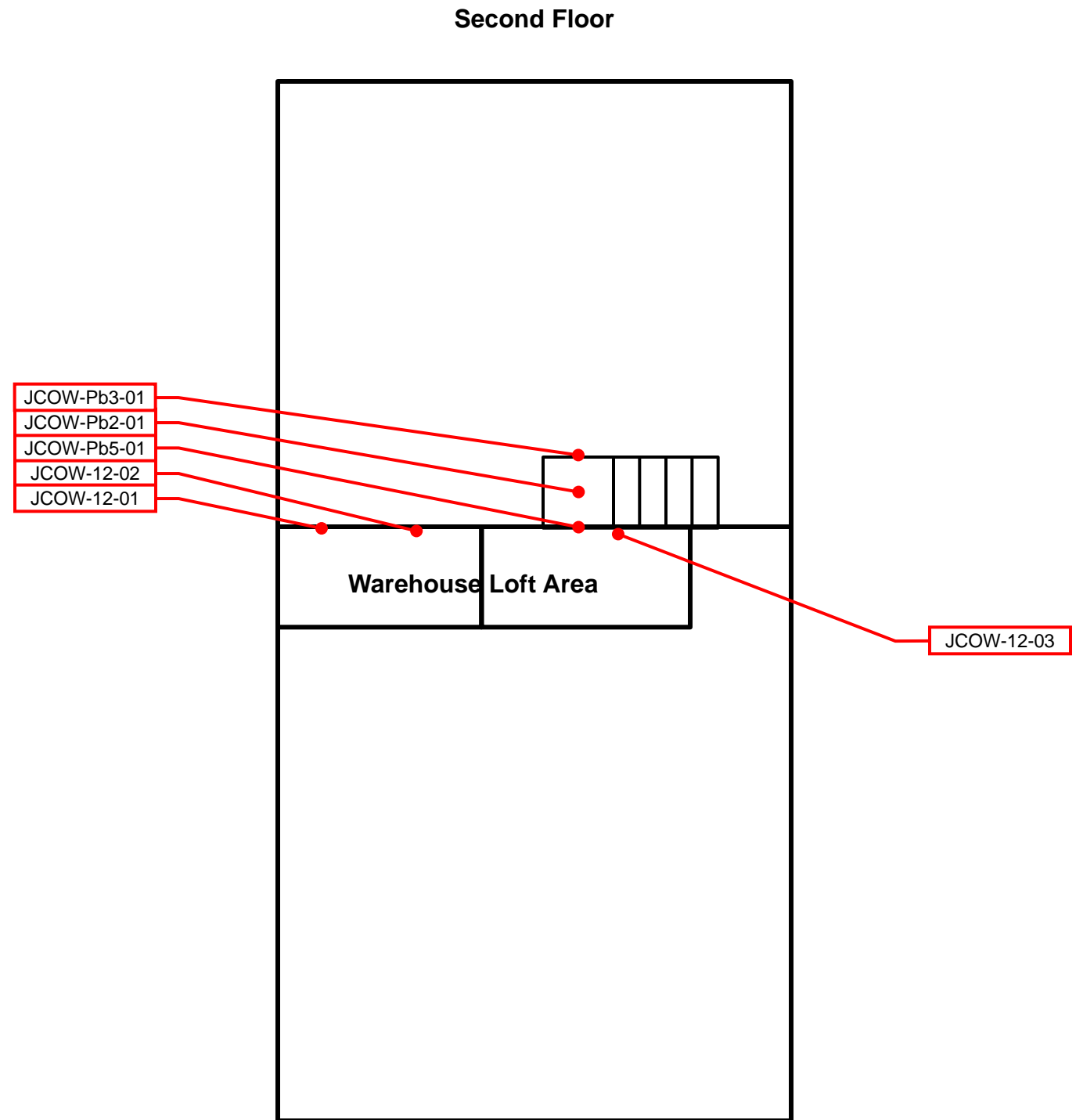
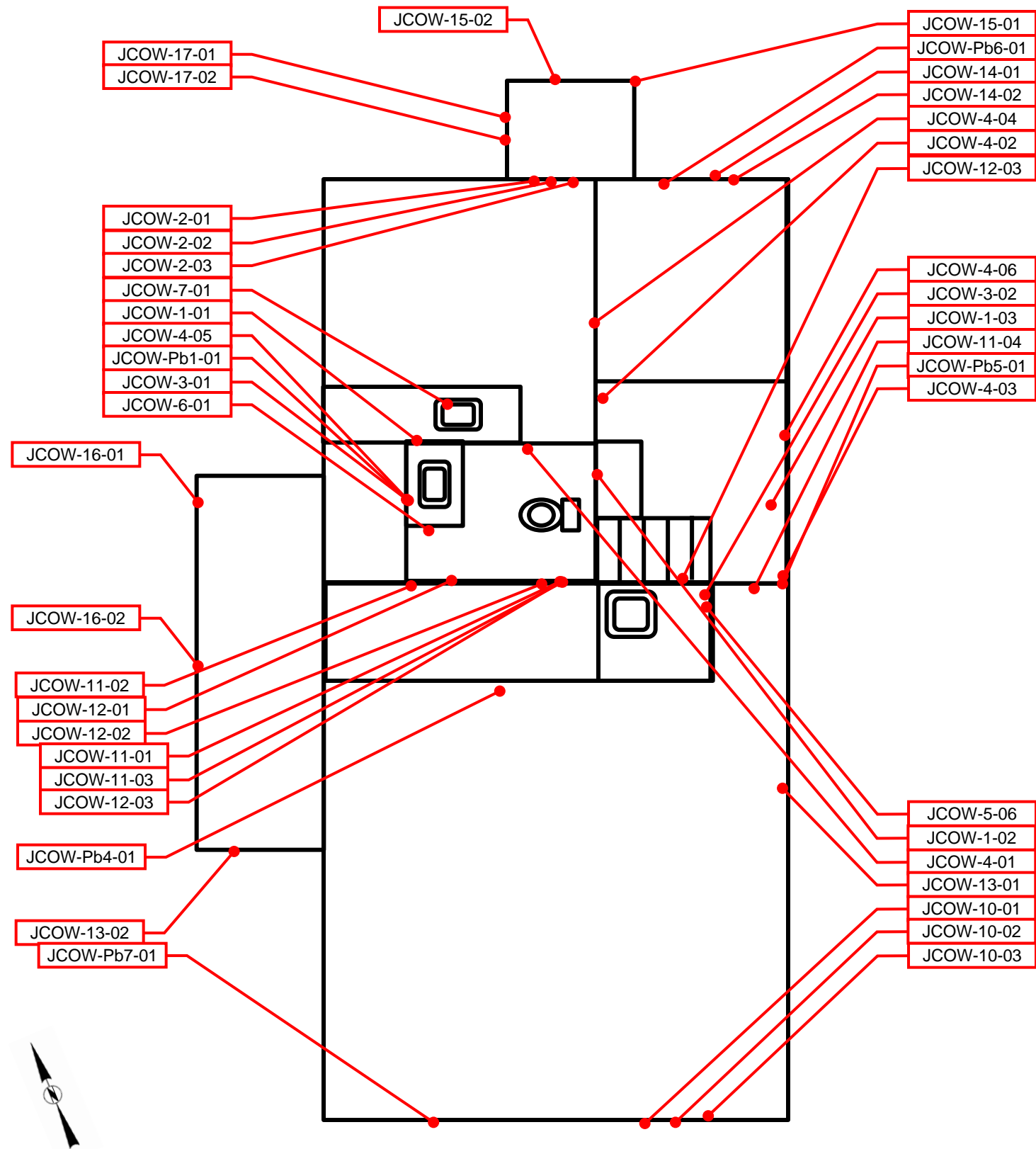


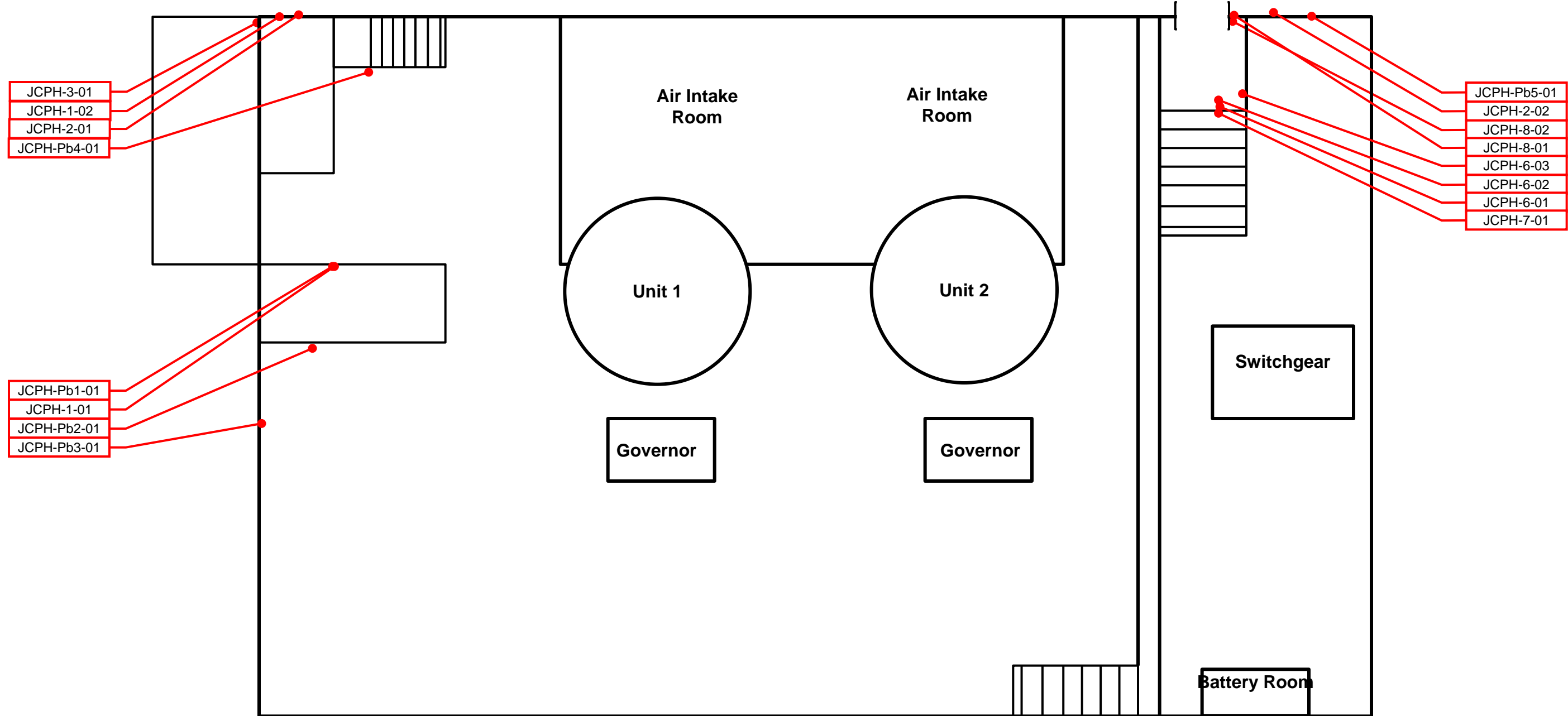
Figure 10
Asbestos and Lead Sample Locations
Groundwater Pumphouse, Outdoor Storage Area, Vehicle Storage Shed
Hazardous Materials Storage Sheds and Above Ground Storage Tanks



Legend
 JCOW – HSA## – ## = Asbestos sample location
 JCOW – Pb# – ## = Lead paint sample location

Job No. 60537920 Drawing Not to Scale – Schematic Only

Figure 11
Asbestos and Lead Sample Locations
Office Warehouse



Legend
 JCPH – HSA## - ## = Asbestos sample location
 JCPH – Pb# - ## = Lead paint sample location

Job No. 60537920 Drawing Not to Scale – Schematic Only

Figure 12
Asbestos and Lead Sample Locations
Powerhouse Main Level



Legend
JCPH – HSA## - ## = Asbestos sample location
JCPH – Pb# - ## = Lead paint sample location

Job No. 60537920 Drawing Not to Scale – Schematic Only

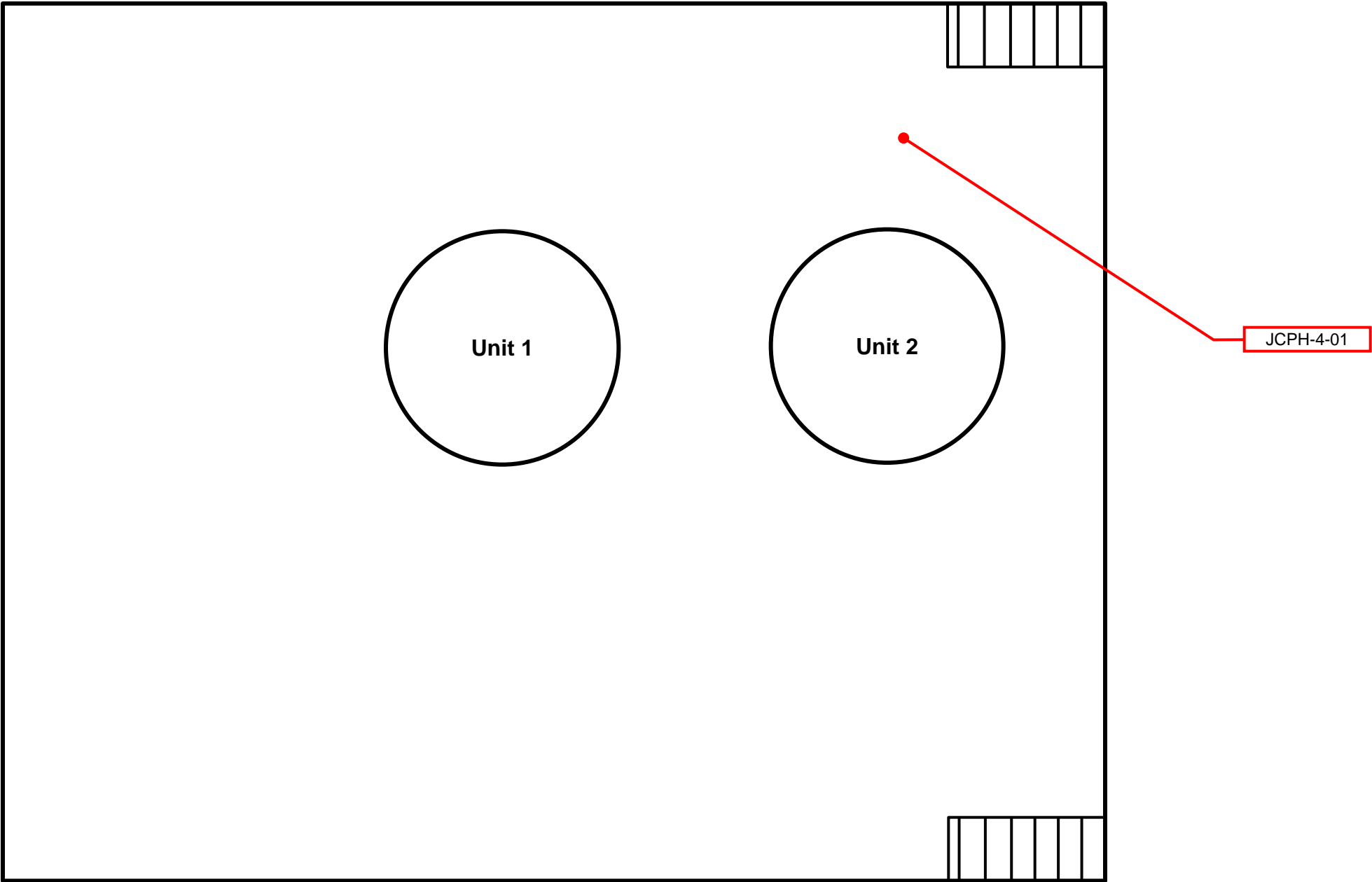
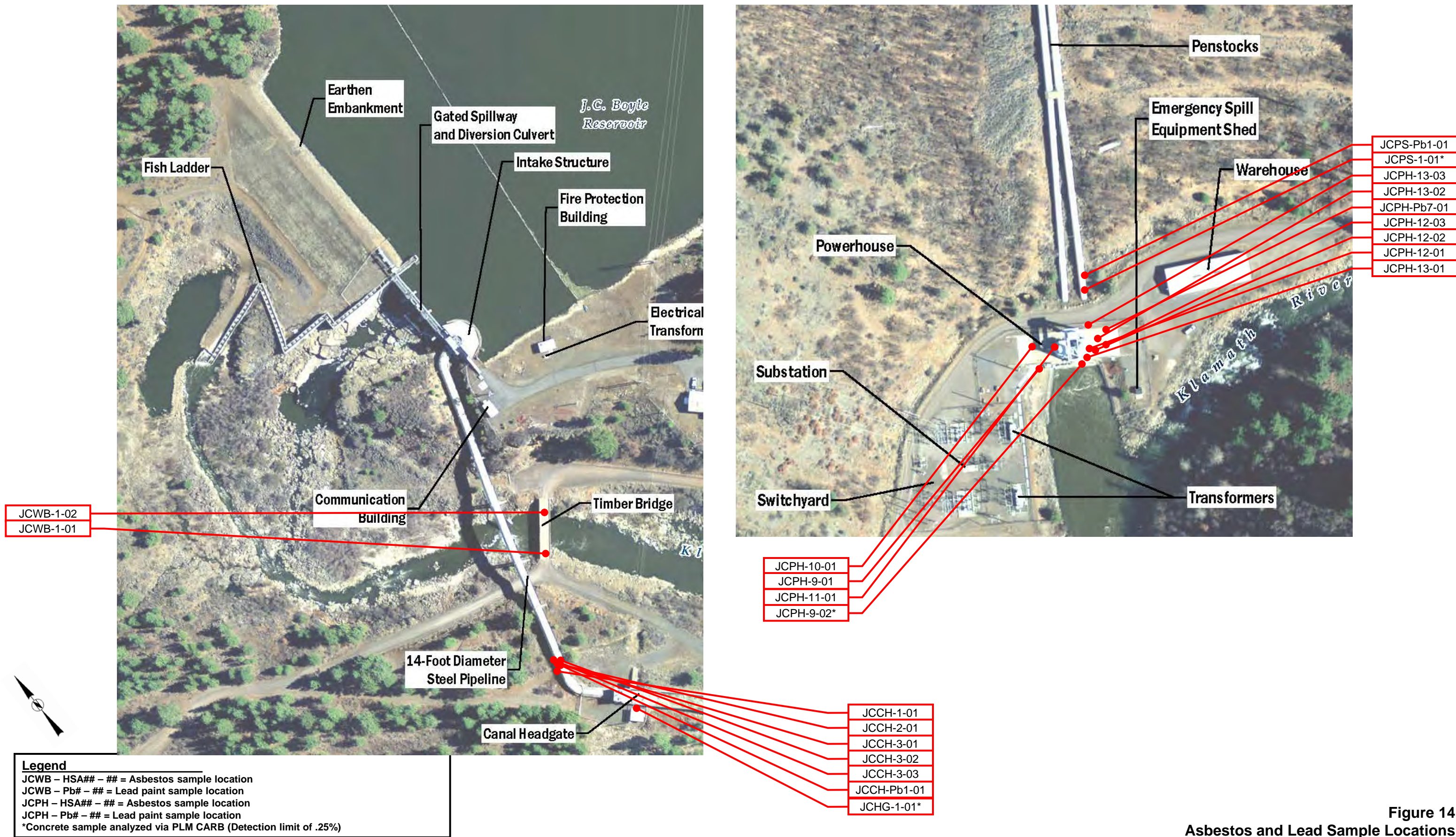
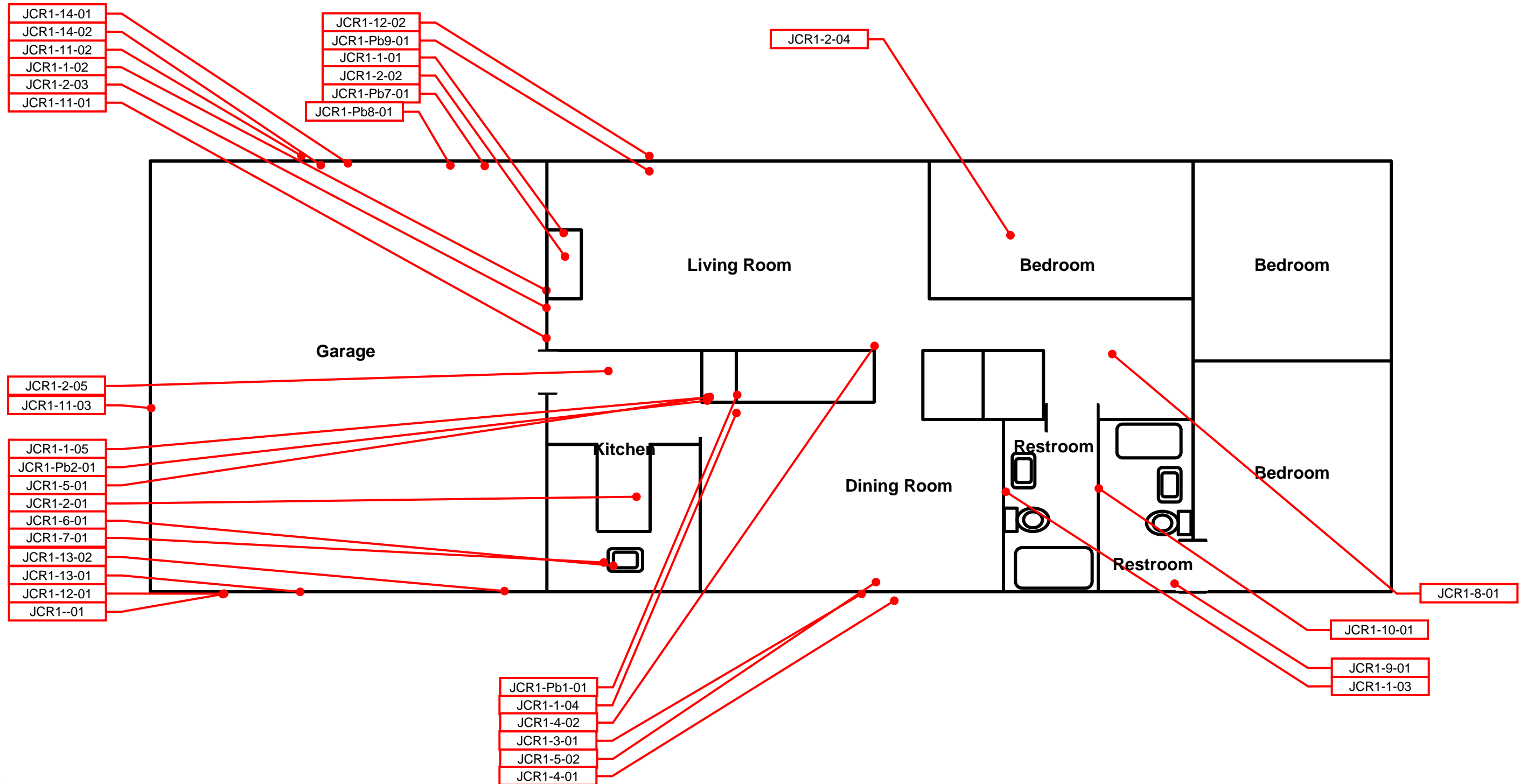


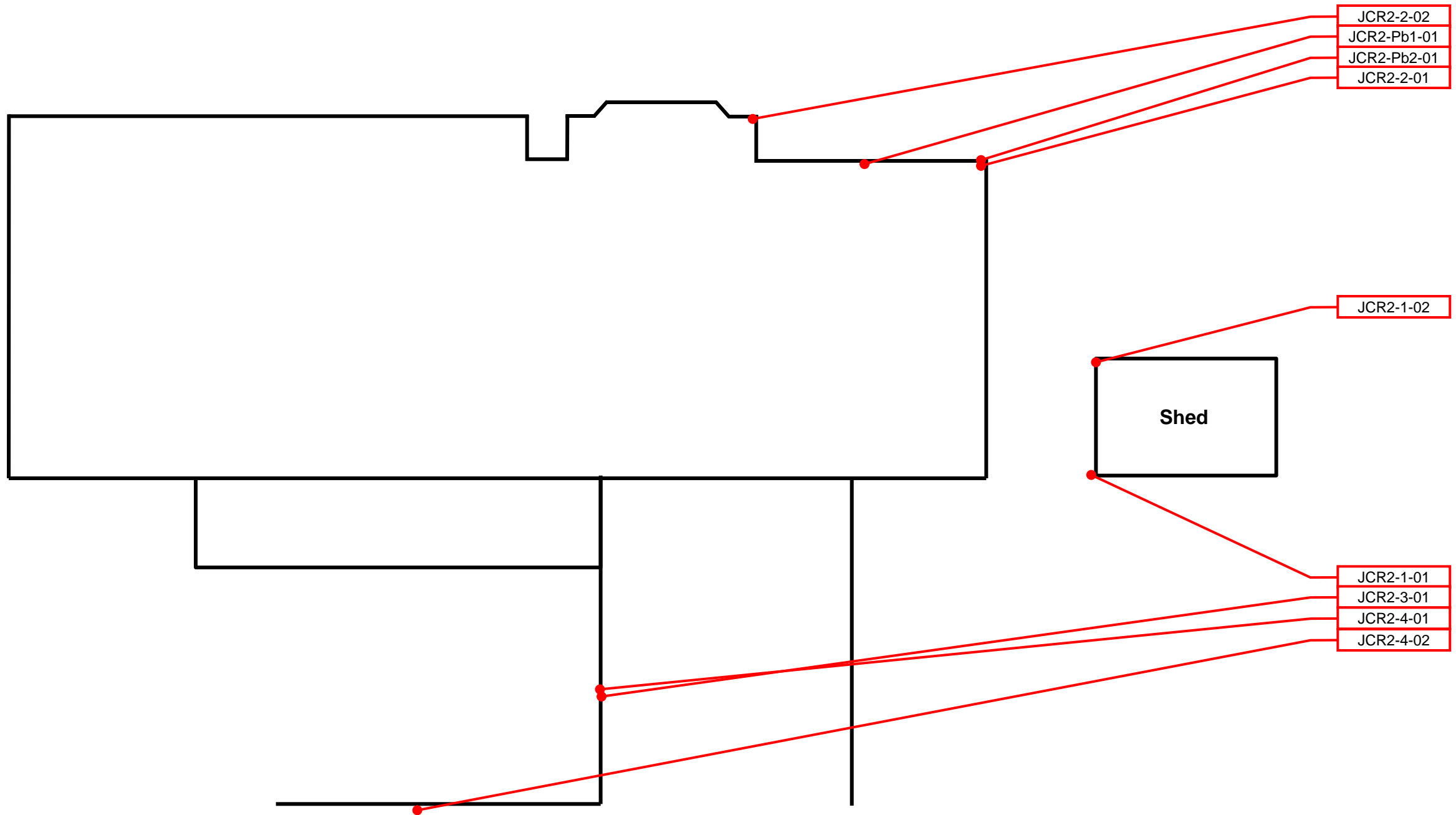
Figure 13
Asbestos and Lead Sample Locations
Powerhouse Basement Level





Legend
 JCR1 – HSA## - ## = Asbestos sample location
 JCR1 – Pb# - ## = Lead paint sample location

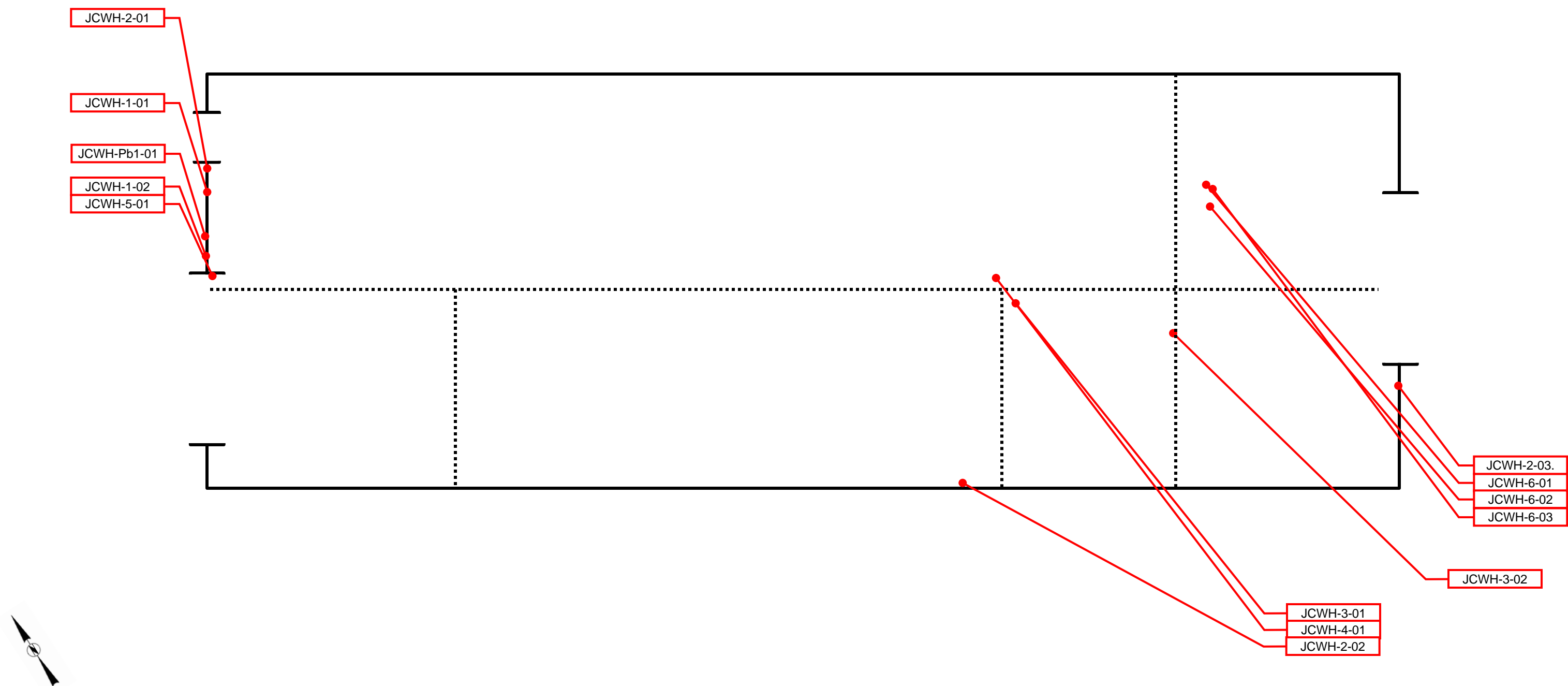
Figure 15
Asbestos and Lead Sample Locations
Residence 1



Legend
 JCCG – HSA## - ## = Asbestos sample location
 JCCG – Pb# - ## = Lead paint sample location

Job No. 60537920 Drawing Not to Scale – Schematic Only

Figure 16
Asbestos and Lead Sample Locations
Residence 2



Legend
 JCWH – HSA## - ## = Asbestos sample location
 JCWH – Pb# - ## = Lead paint sample location

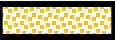
Job No. 60537920 Drawing Not to Scale – Schematic Only

AECOM

Figure 17
Asbestos and Lead Sample Locations
Warehouse

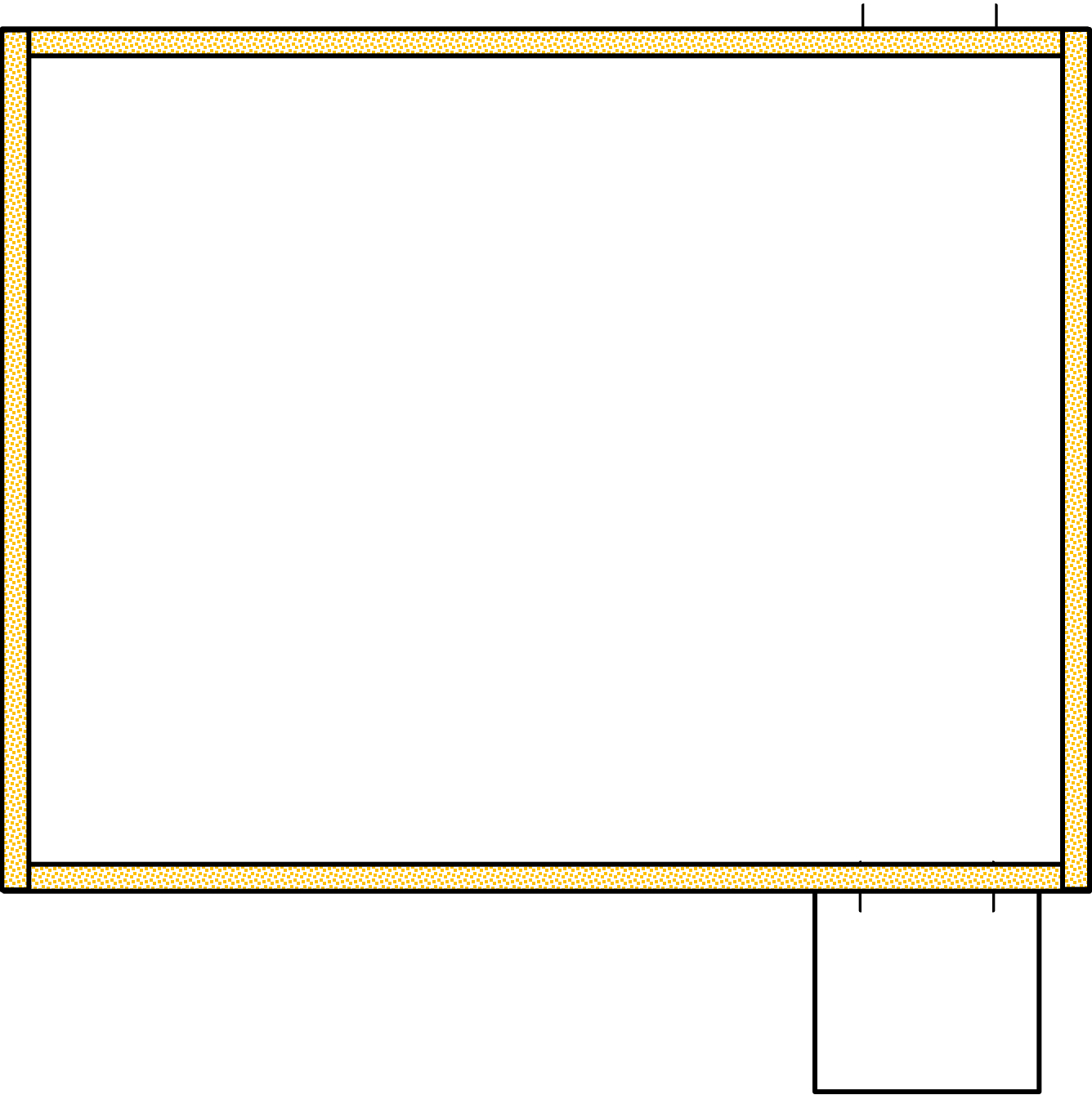
JC Boyle Dam
 Keno, OR

Legend



JCCB-04: Asbestos-containing tan
caulking (M)

Drawing should be printed in color



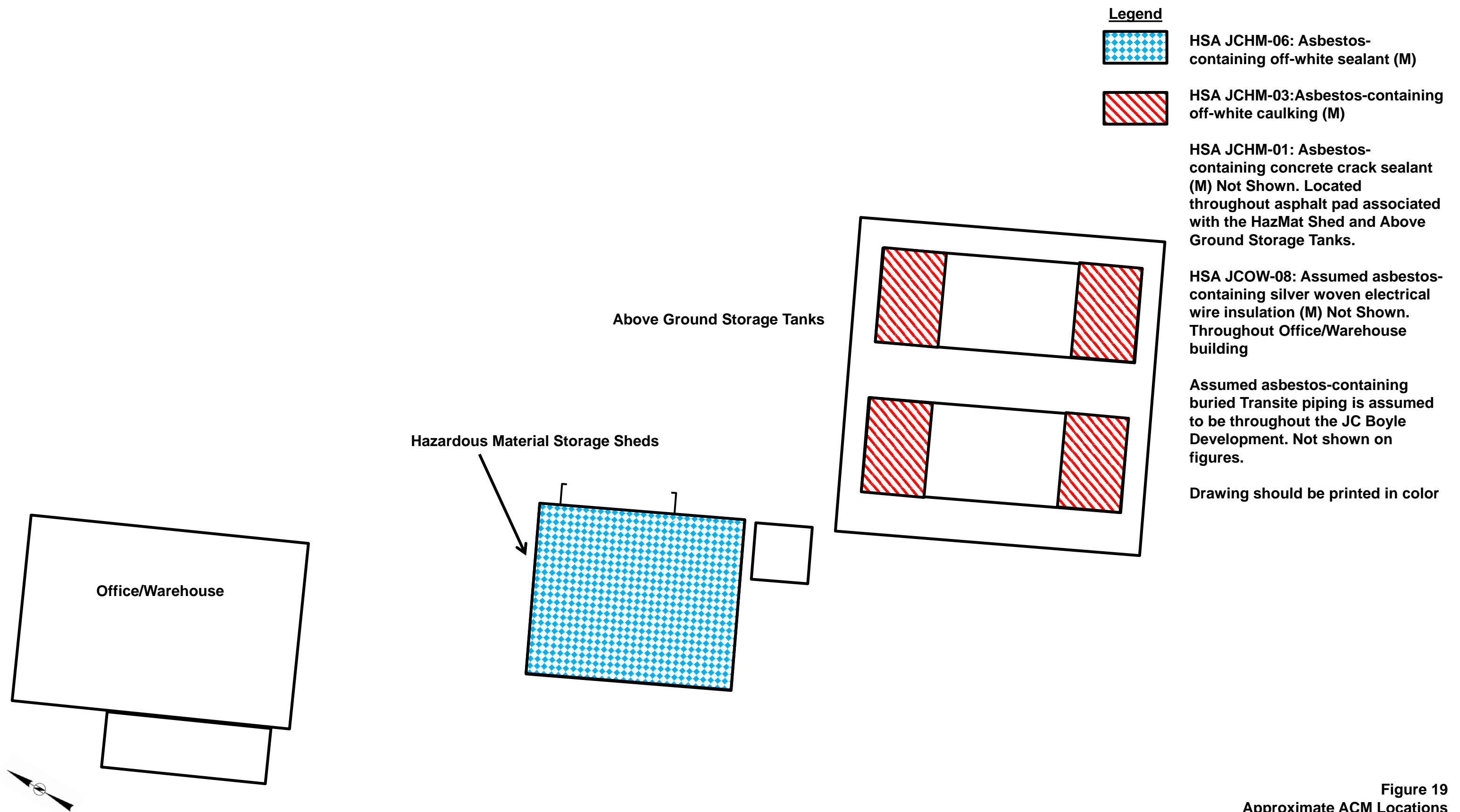
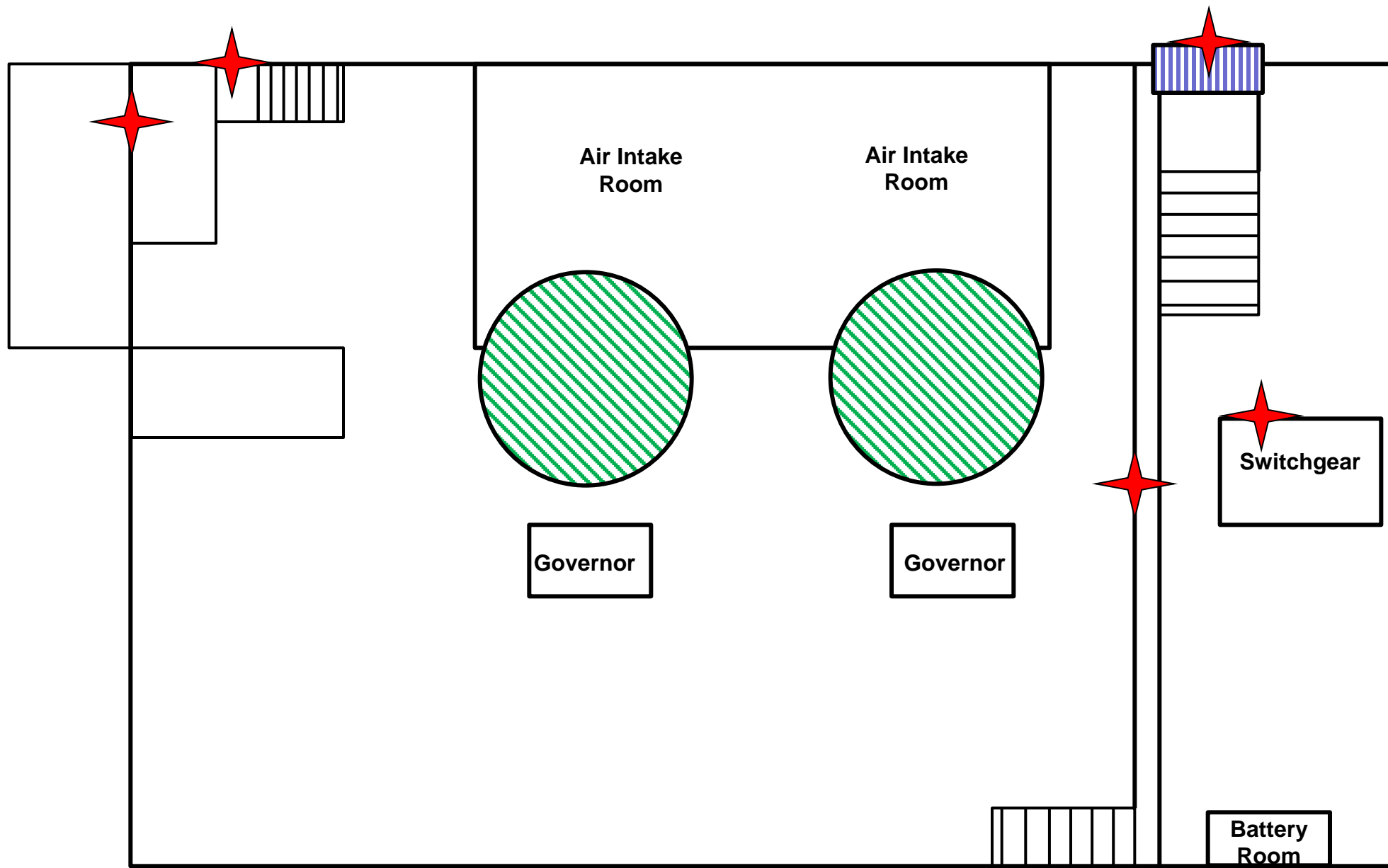


Figure 19
Approximate ACM Locations
Hazardous Materials Storage Sheds and Above Ground Storage Tanks and
Office/Warehouse



Legend



HSA JCPH-08: Asbestos-containing gray door sealant (M)



HSA JCPH-14: Assumed asbestos-containing metal-clad fire door insulation (M)



HSA JCPH-15: Assumed asbestos-containing wicket gates associated with the turbines (M)

HSA JCPH-05: Assumed asbestos-containing gaskets (M) Not shown. Located throughout both levels of the Powerhouse associated with mechanical equipment.

Drawing should be printed in color

Legend
 JCPH – HSA## - ## = Asbestos sample location
 JCPH – Pb# - ## = Lead paint sample location

Figure 20
Asbestos and Lead Sample Locations
Powerhouse Main Level

Legend



HSA JCWH-01: Asbestos-containing black asphaltic slip sheet with cementitious material (M)



HSA JCWH-05: Asbestos-containing tan brittle caulking (M)

Drawing should be printed in color

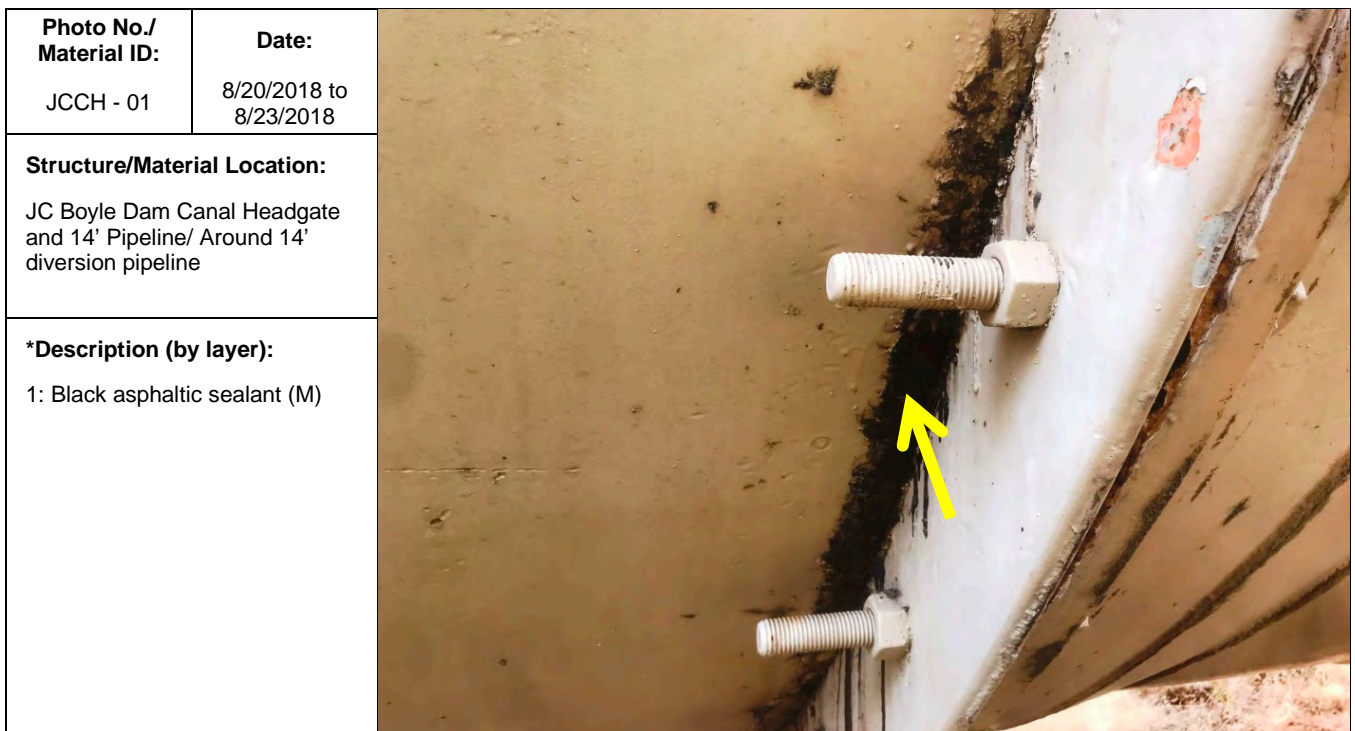


APPENDIX B HSA PHOTOLOGS

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Canal
Headgate and 14' Pipeline

Project No.
60537920



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCCH

Client Name:
Klamath River Renewal
Corporation**Site Location:** J.C. Boyle Development, Canal
Headgate and 14' Pipeline**Project No.**
60537920**Photo No./
Material ID:**

JCCH - 02

Date:8/20/2018 to
8/23/2018**Structure/Material Location:**JC Boyle Dam Canal Headgate
and 14' Pipeline/ Around 14'
diversion pipe down spout***Description (by layer):**

1: Red gasket (M)

**Photo No./
Material ID:**

JCCH - 03

Date:8/20/2018 to
8/23/2018**Structure/Material Location:**JC Boyle Dam Canal Headgate
and 14' Pipeline/ 14' diversion
pipeline***Description (by layer):**

1: Silver paint (M)



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCCH

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Gate Control
and Communications Building

Project No.
60537920

**Photo No./
Material ID:**

Date:

12/06/2018

Structure:

JC Boyle Dam Gate Control and
Communications Building



**Photo No./
Material ID:**

JCGCB - 01

Date:

12/06/2018

Structure/Material Location:

JC Boyle Dam Gate Control and
Communications Building/
Interior window frames

***Description (by layer):**

1: Gray brittle window putty (M)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Gate Control
and Communications Building

Project No.
60537920

Photo No./ Material ID: JCGCB - 02	Date: 12/06/2018
Structure/Material Location: JC Boyle Dam Gate Control and Communications Building / Interior wall at electrical conduit penetrations	
*Description (by layer): 1: Red fire stop sealant (M)	



Photo No./ Material ID: JCGCB - 03	Date: 12/06/2018
Structure/Material Location: JC Boyle Dam Gate Control and Communications Building / Exterior siding seams	
*Description (by layer): 1: Gray sealant (M)	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCGCB Page 2 of 2 AECOM Project Number: 60537920

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Emergency
Spill Equipment Shed

Project No.
60537920

**Photo No./
Material ID:**

Date:

8/20/2018 to
8/23/2018

Structure:

JC Boyle Dam Emergency Spill
Equipment Shed



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Fire
Protection Building

Project No.
60537920

**Photo No./
Material ID:**

Date:

8/20/2018 to
8/23/2018

Structure:

JC Boyle Dam Fire Protection
Building



**Photo No./
Material ID:**

JCFP - 01

Date:

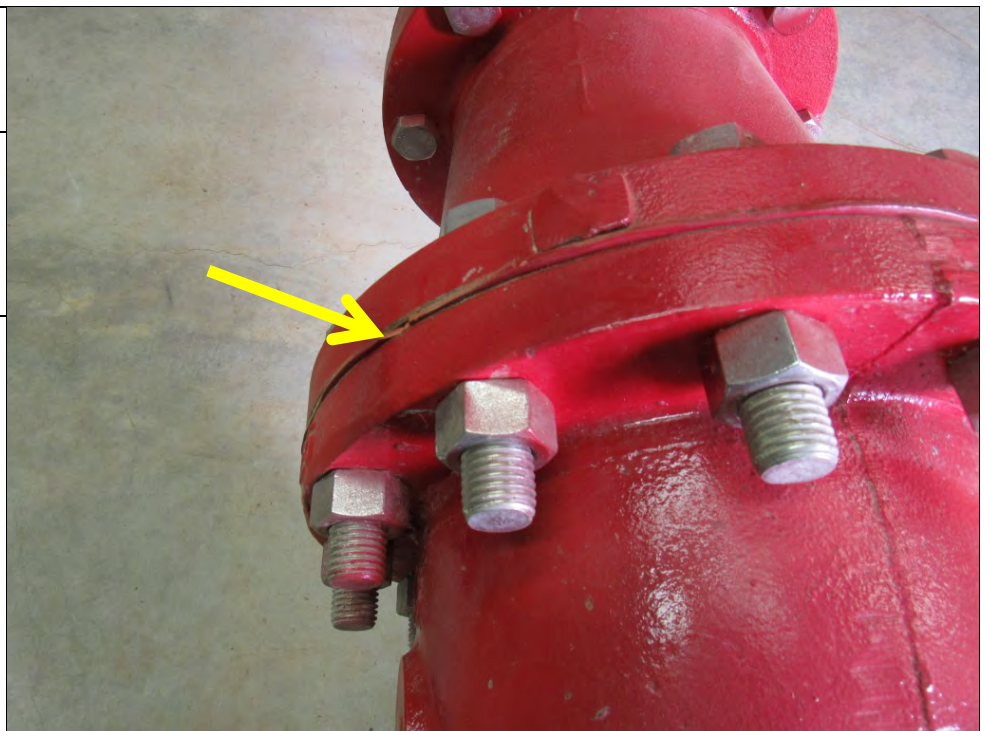
8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Fire Protection
Building/ Piping throughout Fire
Protection Building

***Description (by layer):**

1: Red gasket (M)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Fire
Protection Building

Project No.
60537920

**Photo No./
Material ID:**

JCFP - 02

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Fire Protection
Building/ Exterior asphalt crack
repairs

***Description (by layer):**

1: Black rubber gasket (M)



**Photo No./
Material ID:**

JCFP - 03

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Fire Protection
Building/ Interior of metal double
doors (deterioration exposed
insulation)

***Description (by layer):**

1: Fire door insulation (M)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Fire
Protection Building

Project No.
60537920

Photo No./ Material ID:	Date:
JCFP - 04	8/20/2018 to 8/23/2018
Structure/Material Location:	
JC Boyle Dam Fire Protection Building/ Exterior walls	
*Description (by layer):	
1: Gray CMU and grout (M)	



Photo No./ Material ID:	Date:
JCFP - 05	8/20/2018 to 8/23/2018
Structure/Material Location:	
JC Boyle Dam Fire Protection Building/ Around exterior vents	
*Description (by layer):	
1: Off-white sealant (M)	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCFP

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Groundwater
Pumphouse

Project No.
60537920

**Photo No./
Material ID:**

Date:

8/20/2018 to
8/23/2018

Structure:

JC Boyle Dam Groundwater
Pumphouse



**Photo No./
Material ID:**

JCPH - 01

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Groundwater
Pumphouse/ Out of service
storage tank in Groundwater
Pumphouse

***Description (by layer):**


- 1: Tan paper backing with black mastic (M)
- 2: Pink fiberglass batt insulation (T)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Groundwater
Pumphouse

Project No.
60537920

<p>Photo No./ Material ID:</p> <p>JCPH - 02</p>	<p>Date:</p> <p>8/20/2018 to 8/23/2018</p>	
<p>Structure/Material Location:</p> <p>JC Boyle Dam Groundwater Pumphouse/ Underneath corrugated metal siding, throughout exterior</p>		
<p>*Description (by layer):</p> <p>1: Black asphaltic vapor barrier paper (M)</p>		

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, HazMat
Shed and Above Ground Storage Tanks

Project No.
60537920

**Photo No./
Material ID:**

Date:

8/20/2018 to
8/23/2018

Structure:

JC Boyle Dam HazMat Shed
and Above Ground Storage
Tanks



**Photo No./
Material ID:**

JCHM - 01

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam HazMat Shed
and Above Ground Storage
Tanks/

***Description (by layer):**

1: Asphalt (M)
**2: Asphaltic concrete crack
sealant (M)**



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, HazMat
Shed and Above Ground Storage
Tanks

Project No.
60537920

**Photo No./
Material ID:**

JCHM - 02

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam HazMat Shed
and Above Ground Storage
Tanks/ On above ground storage
tank concrete casing in Fuel
Shed

***Description (by layer):**

1: Textured coating (M)



**Photo No./
Material ID:**

JCHM - 03

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam HazMat Shed
and Above Ground Storage
Tanks/ On above ground storage
tank concrete casing in Fuel
Shed piping

***Description (by layer):**

1: Off-white caulking (M)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, HazMat
Shed and Above Ground Storage Tanks

Project No.
60537920

**Photo No./
Material ID:**

JCHM - 04

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam HazMat Shed
and Above Ground Storage
Tanks/ Roof of small storage
shed adjacent to HazMat Shed

***Description (by layer):**

1: Thick silver paint (M)



**Photo No./
Material ID:**

JCHM - 05

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam HazMat Shed
and Above Ground Storage
Tanks/ On roll-up door to
HazMat Shed

***Description (by layer):**

1: White caulking (M)



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCHM

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, HazMat
Shed and Above Ground Storage Tanks

Project No.
60537920

Photo No./ Material ID: JCHM - 06	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam HazMat Shed and Above Ground Storage Tanks/ Around exterior vents	
*Description (by layer): 1: Off-white sealant (M)	



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Intake
Structure

Project No.
60537920

**Photo No./
Material ID:**

Date:

8/20/2018 to
8/23/2018

Structure:

JC Boyle Dam Intake Structure



**Photo No./
Material ID:**

JCIS - 01

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Intake Structure/
Driveway area of intake structure

***Description (by layer):**

1: Concrete pad (M)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Intake
Structure

Project No.
60537920

Photo No./ Material ID: JCIS - 02	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Intake Structure/ Driveway area of intake structure	
*Description (by layer): 1: Asphaltic concrete crack sealant (M)	



Photo No./ Material ID: JCIS - 03	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Intake Structure/ Intake structure walkway	
*Description (by layer): 1: Textured cementitious coating on walkway (M)	



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Intake
Structure

Project No.
60537920

Photo No./ Material ID: JCIS - 04	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Intake Structure/ On wood bridge to intake structure	
*Description (by layer): 1: Asphaltic creosote (M)	



Photo No./ Material ID: JCIS - 05	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Intake Structure/ Flex pipe connection associated with pump inside Fish Screen Building	
*Description (by layer): 1: Brown woven gasket (M)	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCIS Page 3 of 9 AECOM Project Number: 60537920

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Intake
Structure

Project No.
60537920

Photo No./ Material ID: JCIS - 06	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Intake Structure/ Piping connecting traveling water screens inside Fish Screen Building	
*Description (by layer): 1: Thick silver paint (M) 2: Paint on piping (M)	



Photo No./ Material ID: JCIS - 07	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Intake Structure/ At concrete wall/wood ceiling interface inside Fish Screen Building	
*Description (by layer): 1: White caulking (M) 2: Brown caulking (M)	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCIS

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Intake
Structure

Project No.
60537920

Photo No./ Material ID: JCIS - 08	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Intake Structure/ Around exterior vents	
*Description (by layer): 1: Black asphaltic mastic and paper (M) 2: Fiberglass batt insulation (T) 3: Off-white paint (M)	



Photo No./ Material ID: JCIS - 09	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Intake Structure/ Around exterior vents	
*Description (by layer): 1: Thick silver paint (M) 2: Paint on piping (M)	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Intake
Structure

Project No.
60537920

Photo No./ Material ID:	Date:
JCIS - 10	8/20/2018 to 8/23/2018
Structure/Material Location:	
JC Boyle Dam Intake Structure/ Structure around stop logs	
*Description (by layer):	
1: Concrete stop log gate structural bed (M)	



Photo No./ Material ID:	Date:
JCIS - 11	8/20/2018 to 8/23/2018
Structure/Material Location:	
JC Boyle Dam Intake Structure/ At walkway expansion joints	
*Description (by layer):	
1: White sealant (M)	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCIS

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Intake
Structure

Project No.
60537920




Photo No./ Material ID: JCIS - 12	Date: 8/20/2018 to 8/23/2018	
Structure/Material Location: JC Boyle Dam Intake Structure/ Around exterior vents		
*Description (by layer): 1: Light weight concrete coating (M) 2: Light weight concrete coating (M)		

Photo No./ Material ID: JCIS - 13	Date: 8/20/2018 to 8/23/2018	
Structure/Material Location: JC Boyle Dam Intake Structure/ Stop log structural cage frame		
*Description (by layer): 1: Thick silver paint (M) 2: Residual corroded metal (M)		

*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Client Name: Klamath River Renewal Corporation	Site Location: J.C. Boyle Development, Intake Structure	Project No. 60537920
--	--	--------------------------------

Photo No./ Material ID: JCIS - 14	Date: 8/20/2018 to 8/23/2018	No Photo
Structure/Material Location: JC Boyle Dam Intake Structure/ At beginning of wood bridge		
*Description (by layer): 1: Concrete patch (M)		

Photo No./ Material ID: JCIS - 15	Date: 8/20/2018 to 8/23/2018	
Structure/Material Location: JC Boyle Dam Intake Structure/ Exterior of intake structure, below fish screen house lower section		
*Description (by layer): 1: Thick silver paint (M) 2: Residual corroded metal (M)		

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Intake
Structure

Project No.
60537920

**Photo No./
Material ID:**

JCIS - 16

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Intake Structure/
Underneath wood walls of Intake
Structure Reservoir Level
Building

***Description (by layer):**

1: Black asphaltic vapor barrier
paper (M)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Office and
Warehouse

Project No.
60537920

**Photo No./
Material ID:**

Date:

8/20/2018 to
8/23/2018

Structure:

JC Boyle Dam Office and
Warehouse



**Photo No./
Material ID:**

JCOW - 01

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Office and
Warehouse/ Flooring in break
room, shower room, office,
hallway, and restroom

***Description (by layer):**

- 1: Gray vinyl floor sheeting with
light gray pebble pattern (M)
- 2: Gray paper backing with
mastic (M)



Client Name:
Klamath River Renewal
Corporation**Site Location:** J.C. Boyle Development, Office and
Warehouse**Project No.**
60537920**Photo No./
Material ID:**

JCOW - 02

Date:8/20/2018 to
8/23/2018**Structure/Material Location:**JC Boyle Dam Office and
Warehouse/ Ceiling in entry way***Description (by layer):**1: 12"x12" white tongue and
groove nailed-on ceiling tiles
with fissure pattern (M)**Photo No./
Material ID:**

JCOW - 03

Date:8/20/2018 to
8/23/2018**Structure/Material Location:**JC Boyle Dam Office and
Warehouse/ Walls throughout
office main floor***Description (by layer):**1: 4" tan rubber cove base (M)
2: White mastic (M)

*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCOW

Client Name: Klamath River Renewal Corporation	Site Location: J.C. Boyle Development, Office and Warehouse	Project No. 60537920
--	--	--------------------------------

Photo No./ Material ID:	Date:	
JCOW - 04	8/20/2018 to 8/23/2018	
Structure/Material Location: JC Boyle Dam Office and Warehouse/ Associated with generator piping, pumphouse lower level		
*Description (by layer): 1: White spray-applied wall texture (S) 2: White gypsum wallboard with paper (M)		

Photo No./ Material ID:	Date:	Not Used
JCOW - 05	---	
Structure/Material Location: Not used		
*Description (by layer):		

Client Name:
Klamath River Renewal
Corporation**Site Location:** J.C. Boyle Development, Office and
Warehouse**Project No.**
60537920**Photo No./
Material ID:**

JCOW - 06

Date:8/20/2018 to
8/23/2018**Structure/Material Location:**JC Boyle Dam Office and
Warehouse/ Restroom counter***Description (by layer):**

1: White sink caulking (M)

**Photo No./
Material ID:**

JCOW - 07

Date:8/20/2018 to
8/23/2018**Structure/Material Location:**JC Boyle Dam Office and
Warehouse/ Underneath
restroom counter***Description (by layer):**1: Black plastic sink patch (M)
2: Yellow mastic (M)

*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCOW

Client Name:
Klamath River Renewal
Corporation

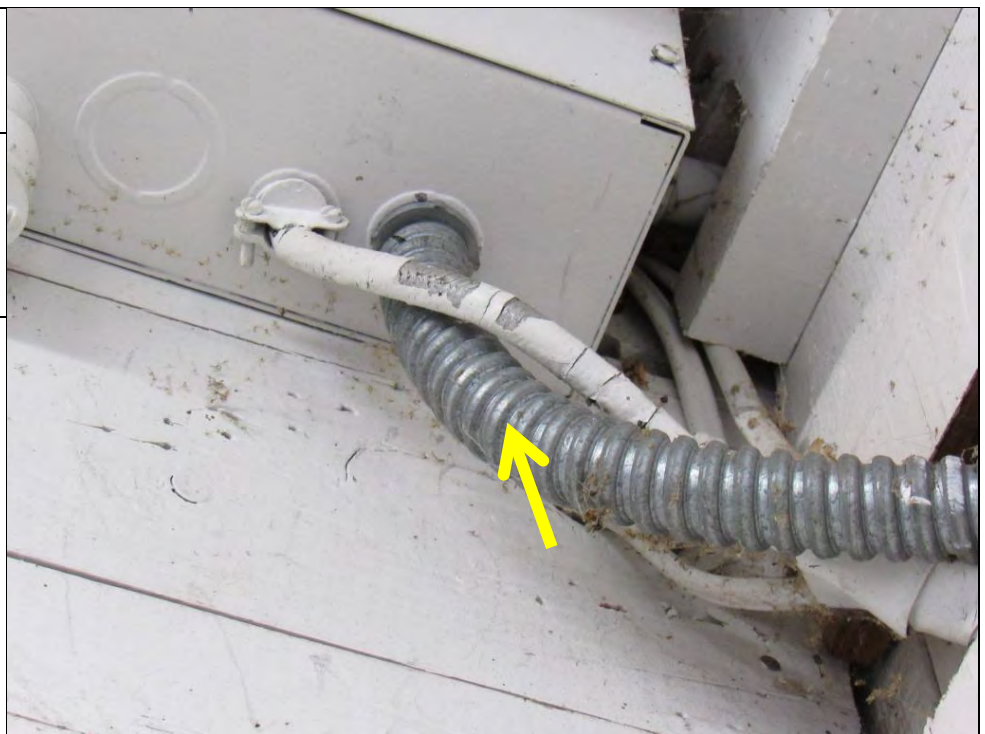
Site Location: J.C. Boyle Development, Office and
Warehouse

Project No.
60537920

Photo No./ Material ID: JCOW - 08	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Office and Warehouse/ Throughout Office and Warehouse	
*Description (by layer): Assumed asbestos-containing silver woven electrical wire insulation (M)	



Photo No./ Material ID: JCOW - 09	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Office and Warehouse/ Throughout Office and Warehouse	
*Description (by layer): Assumed electrical wire insulation inside conduit (M)	



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Office and
Warehouse

Project No.
60537920

Photo No./ Material ID: JCOW - 10	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Office and Warehouse/ Insulation inside two roll-up doors in Warehouse	
*Description (by layer): 1: Yellow mastic with foam and foil backing (M) 2: Off-white foam material (M)	



Photo No./ Material ID: JCOW - 11	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Office and Warehouse/ Above ceiling in attic of Warehouse	
*Description (by layer): 1: Black asphaltic mastic with paper (M) 2: Pink fiberglass batt insulation (T)	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCOW

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Office and
Warehouse

Project No.
60537920

Photo No./ Material ID: JCOW - 12	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Office and Warehouse/ Behind wood wall, loft area of Warehouse	
*Description (by layer): 1: Black asphaltic mastic with paper (M) 2: Yellow fiberglass batt insulation (T)	



Photo No./ Material ID: JCOW - 13	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Office and Warehouse/ At base of exterior metal walls, at wall/concrete interface	
*Description (by layer): 1: Black caulking (M)	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCOW

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Office and
Warehouse

Project No.
60537920

**Photo No./
Material ID:**

JCOW - 14

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Office and
Warehouse/ Exterior window
panes

***Description (by layer):**

1: White brittle window putty (M)



**Photo No./
Material ID:**

JCOW - 15

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Office and
Warehouse/ Underneath
corrugated metal roof,
throughout

***Description (by layer):**

1: Black asphaltic roofing paper
(M)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Office and
Warehouse

Project No.
60537920

Photo No./ Material ID: JCOW - 16	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Office and Warehouse/ Underneath corrugated metal siding of Office Warehouse shed	
*Description (by layer): 1: Brown asphaltic vapor barrier paper (M)	



Photo No./ Material ID: JCOW - 17	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Office and Warehouse/ Underneath corrugated metal siding throughout Office Warehouse	
*Description (by layer): 1: Brown asphaltic vapor barrier paper (M)	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCOW Page 9 of 9 AECOM Project Number: 60537920

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Outdoor
Storage Area

Project No.
60537920

Photo No./ Material ID: ---	Date: 9/17/2018
Structure: JC Boyle Dam Outdoor Storage Area	



Photo No./ Material ID: JCBY - 01	Date: 9/17/2018
Structure/Material Location: JC Boyle Dam Outdoor Storage Area/ Out of service storage tank in Outdoor Storage Area	
*Description (by layer): 1: Red gasket (M) 2: Yellow mastic (M)	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCBY Page 1 of 2 AECOM Project Number: 60537920

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Outdoor
Storage Area

Project No.
60537920

Photo No./ Material ID:	Date:
JCBY - 02	9/17/2018
Structure/Material Location: JC Boyle Dam Outdoor Storage Area/ Out of service storage tank in Outdoor Storage Area	
*Description (by layer): 1: Residual black asphaltic material with granules (M)	



Photo No./ Material ID:	Date:
JCBY - 03	9/17/2018
Structure/Material Location: JC Boyle Dam Outdoor Storage Area/ Walls throughout office main floor	
*Description (by layer): 1: Silver paint (M) 2: Yellow brittle material (M)	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCBY

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Powerhouse

Project No.
60537920

**Photo No./
Material ID:**

Date:

8/20/2018 to
8/23/2018

Structure:

JC Boyle Dam Powerhouse



**Photo No./
Material ID:**

JCPH - 01

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Powerhouse/
Walls throughout Powerhouse

***Description (by layer):**

- 1: Grout associated with CMU
(M)
- 2: Grout associated with CMU
(M)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Powerhouse

Project No.
60537920

Photo No./ Material ID: JCPH - 02	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Powerhouse/ Interior window panes	
*Description (by layer): 1: Gray window putty (M)	



Photo No./ Material ID: JCPH - 03	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Powerhouse/ Restroom walls	
*Description (by layer): 1: 2" black rubber cove base (M) 2: Yellow mastic (M)	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCPH

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Powerhouse

Project No.
60537920

Photo No./ Material ID: JCPH - 04	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Powerhouse/ Associated with generator piping, pumphouse lower level	
*Description (by layer): 1: Red gasket (M) 2: Black mastic (M)	



Photo No./ Material ID: JCPH - 05	Date: 08/20/18 to 08/23/2018
Structure/Material Location: JC Boyle Dam Powerhouse/ Piping and mechanical equipment throughout Pumphouse	
*Description (by layer): Assumed asbestos-containing gaskets	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCPH

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Powerhouse

Project No.
60537920



Photo No./ Material ID: JCPH - 06	Date: 8/20/2018 to 8/23/2018	
Structure/Material Location: JC Boyle Dam Powerhouse/ Entry into switchgear room, associated with HVAC system		
*Description (by layer): 1: White spray-applied texture wall coating (S) 2: White gypsum wallboard with paper (M)		

Photo No./ Material ID: JCPH - 07	Date: 8/20/2018 to 8/23/2018	
Structure/Material Location: JC Boyle Dam Powerhouse/ Entry into switchgear room, associated with HVAC system		
*Description (by layer): 1: White sealant (M)		

*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCPH

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Powerhouse

Project No.
60537920

Photo No./ Material ID: JCPH - 08	Date: 8/20/2018 to 8/23/2018	
Structure/Material Location: JC Boyle Dam Powerhouse/ Throughout Powerhouse		
*Description (by layer): 1: White door sealant (M) 2: Gray door sealant (M)		

Photo No./ Material ID: JCPH - 09	Date: 8/20/2018 to 8/23/2018	
Structure/Material Location: JC Boyle Dam Powerhouse/ Concrete pad/roof top side of Powerhouse		
*Description (by layer): 1: Concrete (M)		

*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCPH

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Powerhouse

Project No.
60537920

Photo No./ Material ID:	Date:
JCPH - 10	8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Powerhouse/ Insulation inside two roll-up doors in Warehouse	
*Description (by layer): 1: Yellow mastic with foam and foil backing (M) 2: Off-white foam material (M)	



Photo No./ Material ID:	Date:
JCPH - 11	8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Powerhouse/ Above ceiling in attic of Warehouse	
*Description (by layer): 1: Black asphaltic mastic with paper (M) 2: Pink fiberglass batt insulation (T)	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCPH

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Powerhouse

Project No.
60537920

Photo No./ Material ID: JCPH - 12	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Powerhouse/ Behind wood wall, loft area of Warehouse	
*Description (by layer): 1: Black asphaltic mastic with paper (M) 2: Yellow fiberglass batt insulation (T)	




Photo No./ Material ID: JCPH - 13	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Powerhouse/ At base of exterior metal walls, at wall/concrete interface	
*Description (by layer): 1: Black caulking (M)	



Client Name: Klamath River Renewal Corporation	Site Location: J.C. Boyle Development, Residence 1	Project No. 60537920
--	---	--------------------------------

Photo No./ Material ID: ---	Date: 8/20/2018 to 8/23/2018	
Structure: JC Boyle Dam Residence 1		

Photo No./ Material ID:	Date:	
JCR1 - 01	8/20/2018 to 8/23/2018	
Structure/Material Location: JC Boyle Dam Residence 1/ Walls throughout Residence 1		
*Description (by layer): 1: White spray-applied texture wall coating (S) 2: White gypsum wallboard with paper (M)		

*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Client Name:
Klamath River Renewal
Corporation**Site Location:** J.C. Boyle Development, Residence 1**Project No.**
60537920**Photo No./
Material ID:**

JCR1 - 02

Date:8/20/2018 to
8/23/2018**Structure/Material Location:**JC Boyle Dam Residence 1/
Ceilings throughout***Description (by layer):****1: White troweled-on surface
ceiling coat (S)****Photo No./
Material ID:**

JCR1 - 03

Date:8/20/2018 to
8/23/2018**Structure/Material Location:**JC Boyle Dam Residence 1/ At
base of french doors in dining
room***Description (by layer):****1: White caulking (M)**
**2: Gray vinyl floor sheeting with
marble and cobblestone pattern
(M)**

*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCR1

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Residence 1

Project No.
60537920

Photo No./ Material ID:	Date:
JCR1 - 04	8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Residence 1/ Associated with generator piping, pumphouse lower level	
*Description (by layer): 1: 4" black rubber cove base (M) 2: Yellow mastic (M) 3: White spray-applied texture wall coating (S)	



Photo No./ Material ID:	Date:
JCR1 - 05	08/20/18 to 08/23/2018
Structure/Material Location: JC Boyle Dam Residence 1/ Flooring in dining room and kitchen	
*Description (by layer): 1: Gray vinyl floor sheeting with marble and cobblestone pattern (M) 2: Yellow mastic (M)	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCR1

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Residence 1

Project No.
60537920

**Photo No./
Material ID:**

JCR1 - 06

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Residence 1/
Kitchen sink

***Description (by layer):**

1: White sink undercoating (M)



**Photo No./
Material ID:**

JCR1 - 07

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Residence 1/
Entry into switchgear room,
associated with HVAC system

***Description (by layer):**

1: White sink undercoating (M)
2: Black sink patch (M)



Client Name:
Klamath River Renewal
Corporation**Site Location:** J.C. Boyle Development, Residence 1**Project No.**
60537920**Photo No./
Material ID:**

JCR1 - 08

Date:8/20/2018 to
8/23/2018**Structure/Material Location:**JC Boyle Dam Residence 1/
Above rafters in attic, throughout***Description (by layer):**

1: Black asphaltic paper (M)

**Photo No./
Material ID:**

JCR1 - 09

Date:8/20/2018 to
8/23/2018**Structure/Material Location:**JC Boyle Dam Residence 1/
Concrete pad/roof top side of
Residence 1***Description (by layer):**1: Gray vinyl flor sheeting (M)
2: Clear adhesive (M)
3: Gray leveling compound (M)
4: Off-white vinyl floor sheeting
(M)
5: Gray paper backing with
yellow mastic (M)

Client Name: Klamath River Renewal Corporation	Site Location: J.C. Boyle Development, Residence 1	Project No. 60537920
--	---	--------------------------------



Photo No./ Material ID:	Date:	
JCR1 - 10	8/20/2018 to 8/23/2018	
Structure/Material Location: JC Boyle Dam Residence 1/ Around vent in bathroom		
*Description (by layer): 1: Gray leveling compound (M)		

Photo No./ Material ID:	Date:	
JCR1 - 11	8/20/2018 to 8/23/2018	
Structure/Material Location:		
JC Boyle Dam Residence 1/ Walls throughout		
*Description (by layer):		
1: White spray-applied texture wall coating (S)		
2: White joint compound with paper (M)		
3: White gypsm wallboard with paper (M)		

*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Residence 1

Project No.
60537920

**Photo No./
Material ID:**

JCR1 - 12

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Residence 1/
Underneath corrugated metal
roof throughout

***Description (by layer):**

1: Black roofing paper (M)



**Photo No./
Material ID:**

JCR1 - 13

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Residence 1/
Base of wood siding throughout
exterior

***Description (by layer):**

1: Black sealant (M)
2: Gray concrete with paint (M)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Residence 1

Project No.
60537920

**Photo No./
Material ID:**

JCR1 - 14

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Residence 1/ At
interface between garage and
driveway

***Description (by layer):**

1: Gray grout (M)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Residence 2

Project No.
60537920

**Photo No./
Material ID:**

Date:

8/20/2018 to
8/23/2018

Structure:

JC Boyle Dam Residence 2



**Photo No./
Material ID:**

JCR2 - 01

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Residence 2/
Shed roofing, throughout

***Description (by layer):**

- 1: Black asphaltic roofing
shingles with granules (M)
- 2: Black asphaltic fibrous felt (S)



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCR2

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Residence 2

Project No.
60537920

**Photo No./
Material ID:**

JCR2 - 02

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Residence 2/
Underneath exterior wood
siding, throughout

***Description (by layer):**

1: White vapor barrier paper (M)



**Photo No./
Material ID:**

JCR2 - 03

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Residence 2/
Driveway

***Description (by layer):**

1: Black asphaltic material (M)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Residence 2

Project No.
60537920

**Photo No./
Material ID:**

JCR2 - 04

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Residence 2/
Driveway

***Description (by layer):**

1: Black asphaltic seam sealant
(M)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Spillway
Control Center Building

Project No.
60537920

Photo No./ Material ID: ---	Date: 8/20/2018 to 8/23/2018
Structure: JC Boyle Dam Spillway Control Center Building	



Photo No./ Material ID: JCSW - 01	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Spillway Control Center Building/ Support concrete associated with Spillway Control Center Building	
*Description (by layer): 1: Concrete (M)	



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Spillway
Control Center Building

Project No.
60537920

**Photo No./
Material ID:**

JCSW - 02

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Spillway Control
Center Building/ Associated with
wood shoring on hill in front of
Spillway Control Center Building

***Description (by layer):**

1: Black creosote (M)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Timber
Bridge

Project No.
60537920

**Photo No./
Material ID:**

Date:

8/20/2018 to
8/23/2018

Structure:

JC Boyle Dam Timber Bridge



**Photo No./
Material ID:**

JCWB - 01

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Timber Bridge/
Throughout Timber Bridge

***Description (by layer):**

1: Creosote (M)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Vehicle
Storage Shed

Project No.
60537920

**Photo No./
Material ID:**

Date:

8/20/2018 to
8/23/2018

Structure:

JC Boyle Dam Vehicle Storage
Shed



**Photo No./
Material ID:**

JCVS - 01

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Vehicle Storage
Shed/ Insulation throughout

***Description (by layer):**

1: Yellow fiberglass batt
insulation with mastic (T)



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Vehicle
Storage Shed

Project No.
60537920

Photo No./ Material ID: JCVS - 02	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Vehicle Storage Shed/ Expansion joints throughout interior flooring	
*Description (by layer): 1: Gray residual concrete (M) 2: Gray caulking (M)	



Photo No./ Material ID: JCVS - 03	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Vehicle Storage Shed/ Exterior siding	
*Description (by layer): 1: White caulking (M)	



Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Vehicle
Storage Shed

Project No.
60537920

Photo No./ Material ID:	Date:
JCVS - 04	8/20/2018 to 8/23/2018
Structure/Material Location:	
JC Boyle Dam Vehicle Storage Shed/ Roof of entry way	
*Description (by layer):	
1: Black asphaltic paper under corrugated metal roof (M)	



Photo No./ Material ID:	Date:
JCVS - 05	8/20/2018 to 8/23/2018
Structure/Material Location:	
JC Boyle Dam Vehicle Storage Shed/ Seams around exterior perimeter - at roll-up doors	
*Description (by layer):	
1: Black brittle sealant (M)	



Client Name:
Klamath River Renewal
Corporation**Site Location:** J.C. Boyle Development, Vehicle
Storage Shed**Project No.**
60537920**Photo No./
Material ID:**

JCVS - 06

Date:8/20/2018 to
8/23/2018**Structure/Material Location:**JC Boyle Dam Vehicle Storage
Shed/ Penetrations around
exterior perimeter***Description (by layer):**

1: Black sealant (M)



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCVS

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Warehouse

Project No.
60537920

**Photo No./
Material ID:**

Date:

8/20/2018 to
8/23/2018

Structure:

JC Boyle Dam Warehouse



**Photo No./
Material ID:**

JCWH - 01

Date:

8/20/2018 to
8/23/2018

Structure/Material Location:

JC Boyle Dam Warehouse/
Exterior interface between metal
siding and concrete foundation

***Description (by layer):**

**1: Black asphaltic slip sheet
with cementitious material (M)**



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCWH

Client Name:
Klamath River Renewal
Corporation**Site Location:** J.C. Boyle Development, Warehouse**Project No.**
60537920**Photo No./
Material ID:**

JCWH - 02

Date:8/20/2018 to
8/23/2018**Structure/Material Location:**JC Boyle Dam Warehouse/ Old
insulation throughout interior***Description (by layer):**

- 1: Paper backing with asphaltic
mastic (M)
- 2: Yellow fiberglass batt
insulation (T)

**Photo No./
Material ID:**

JCWH - 03

Date:8/20/2018 to
8/23/2018**Structure/Material Location:**JC Boyle Dam Warehouse/ At
uneven expansion joints,
concrete floor throughout interior***Description (by layer):**

- 1: Black asphaltic leveling
compound (M)



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCWH

Client Name:
Klamath River Renewal
Corporation

Site Location: J.C. Boyle Development, Warehouse

Project No.
60537920

Photo No./ Material ID: JCWH - 04	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Warehouse/ At uneven expansion joints, concrete floor throughout interior	
*Description (by layer): 1: Gray leveling compound (M)	




Photo No./ Material ID: JCWH - 05	Date: 8/20/2018 to 8/23/2018
Structure/Material Location: JC Boyle Dam Warehouse/ At metal seams around interior roll - up door (potentially at all seams, but more was not visible during inspection)	
*Description (by layer): 1: Tan brittle caulking (M)	



*Layers in bold text are asbestos-containing or are assumed to be asbestos-containing

Categories per AHERA and Cal-OSHA: (S): Surfacing material; (M): Miscellaneous material; (TSI): Thermal System Insulation
Site Photograph Log – JCWH

Client Name: Klamath River Renewal Corporation	Site Location: J.C. Boyle Development, Warehouse	Project No. 60537920
--	---	--------------------------------

Photo No./ Material ID:	Date:	
JCWH - 06	8/20/2018 to 8/23/2018	
Structure/Material Location: JC Boyle Dam Warehouse/ Penetrations around exterior perimeter		
*Description (by layer): 1: White fiberglass insulation with paper (T) 2: Tan fiberglass insulation with paper (M) 3: Black asphaltic mastic (M)		

APPENDIX C LABORATORY ANALYTICAL RESULTS

August 31, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816754.00

Client Project: 60537920.2.4a
Location: JC Boyle Canal Head Gate

Dear Ms. Gladu,

Enclosed please find test results for the 5 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Macfarlane".

Matt Macfarlane, Asbestos Lab Supervisor



Lab Code: 102063-0

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Canal Head Gate

Batch #: 1816754.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 5

Samples Analyzed: 5

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086264 **Client Sample #: JCCH-1-01**

Location: JC Boyle Canal Head Gate

Layer 1 of 1 **Description:** Black soft material with paint chips

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Binder/Filler, Paint, Fine particles	Cellulose 2%	

Lab ID: 18086265 **Client Sample #: JCCH-2-01**

Location: JC Boyle Canal Head Gate

Layer 1 of 2 **Description:** Silver paint

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Metallic paint, Fine particles	None Detected ND	

Layer 2 of 2 **Description:** Red rubbery material

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Rubber/Binder, Fine particles	Cellulose 2%	

Lab ID: 18086266 **Client Sample #: JCCH-3-01**

Location: JC Boyle Canal Head Gate

Layer 1 of 1 **Description:** Silver paint

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Metallic paint, Fine particles	Cellulose 1%	

Lab ID: 18086267 **Client Sample #: JCCH-3-02**

Location: JC Boyle Canal Head Gate

Layer 1 of 1 **Description:** Silver paint

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Metallic paint, Fine particles	Cellulose 2%	

Lab ID: 18086268 **Client Sample #: JCCH-3-03**

Location: JC Boyle Canal Head Gate

Sampled by: Client

Analyzed by: Matthew McCallum

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Canal Head Gate

Batch #: 1816754.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 5

Samples Analyzed: 5

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 1 **Description:** Silver paint

Non-Fibrous Materials:
Metallic paint, Fine particles

Other Fibrous Materials:%
Cellulose 1%

Asbestos Type: %
None Detected ND

Sampled by: Client

Analyzed by: Matthew McCallum

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018


Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle **NVL Batch Number** **1816754.00**
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Canal Head Gate

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 5

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086264	JCCH-1-01		A
2	18086265	JCCH-2-01		A
3	18086266	JCCH-3-01		A
4	18086267	JCCH-3-02		A
5	18086268	JCCH-3-03		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Matthew McCallum		NVL	8/31/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:29 PM

Entered By: Emily Schubert



Laboratory | Management | Training

ASBESTOS CHAIN OF CUSTODY

1816754

Turn Around

- | | | |
|----------------------------------|---------------------------------|----------------------------------|
| <input type="checkbox"/> 1 Hour | <input type="checkbox"/> 2 Days | <input type="checkbox"/> 5 Days |
| <input type="checkbox"/> 2 Hours | <input type="checkbox"/> 3 Days | <input type="checkbox"/> 10 Days |
| <input type="checkbox"/> 4 Hours | | |

Please call for TAT less than 24 Hours

Company AECOM
Address 1111 Third Avenue Suite 1600
Seattle, WA 98101
Phone 206.438.2700

Project Manager Nicole Gladu
Cell ()
Email nicole.gladu@aecom.com
Fax (866) 495 5288

Project Name/Number 60537920.2.4a Project Location JC Boyle Canal Head gate

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> PCM Air (NIOSH 7400) | <input type="checkbox"/> TEM (NIOSH 7402) | <input type="checkbox"/> TEM (AHERA) | <input type="checkbox"/> TEM (EPA Level II Modified) |
| <input checked="" type="checkbox"/> PLM (EPA 600/R-93-116) | <input type="checkbox"/> EPA 400 Points (600/R-93-116) | <input type="checkbox"/> EPA 1000 Points (600/R-93-116) | |
| <input type="checkbox"/> PLM Gravimetry (600/R-93-116) | <input type="checkbox"/> Asbestos in Vermiculite (EPA 600/R-04/004) | <input type="checkbox"/> Asbestos in Sediment (EPA 1900 Points) | |
| <input type="checkbox"/> Asbestos Friable/Non-Friable (EPA 600/R-93/116) | <input type="checkbox"/> Other | | |

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com

☐ Call () ☐ Fax () ☐ Email

Total Number of Samples 5

	Sample ID	Description	A/R
1	JCCH-1-01		
2	2-01		
3	3-01		
4	3-02		
5	3-03		
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	Shannon Mackay		Nuvlabs	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

September 4, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816744.00

Client Project: 60537920.2.4a
Location: JC Boyle Communications Building

Dear Ms. Gladu,

Enclosed please find test results for the 7 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Macfarlane".

Matt Macfarlane, Asbestos Lab Supervisor



Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Communications Building

Batch #: 1816744.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 7

Samples Analyzed: 7

Method: EPA/600/R-93/116
& EPA/600/M4-82-020**Lab ID: 18086177 Client Sample #: JCCB-1-01**

Location: JC Boyle Communications Building

Layer 1 of 1 Description: Light gray soft foamy material with paint

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Binder/Filler, Calcareous particles, Synthetic foam	None Detected ND	
Paint		

Lab ID: 18086178 Client Sample #: JCCB-1-02

Location: JC Boyle Communications Building

Layer 1 of 1 Description: Light gray soft foamy material with debris

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Binder/Filler, Calcareous particles, Debris	None Detected ND	
Insect parts, Synthetic foam		

Lab ID: 18086179 Client Sample #: JCCB-2-01

Location: JC Boyle Communications Building

Layer 1 of 1 Description: Black asphaltic material

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Asphalt/Binder	Cellulose 3%	

Lab ID: 18086180 Client Sample #: JCCB-2-02

Location: JC Boyle Communications Building

Layer 1 of 1 Description: Black soft asphaltic material

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Asphalt/Binder	Cellulose 2%	

Lab ID: 18086181 Client Sample #: JCCB-3-01

Location: JC Boyle Communications Building

Sampled by: Client

Analyzed by: Alla Prysyazhnyuk

Reviewed by: Matt Macfarlane

Date: 09/04/2018

Date: 09/04/2018


 Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Communications Building

Batch #: 1816744.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 7

Samples Analyzed: 7

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 1	Description: Black asphaltic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder	Cellulose 3%		None Detected ND

Lab ID: 18086182 **Client Sample #: JCCB-4-01**

Location: JC Boyle Communications Building

Layer 1 of 1	Description: Light gray soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Insect parts	Polyethylene fibers 4%		Chrysotile 2%

Lab ID: 18086183 **Client Sample #: JCCB-4-02**

Location: JC Boyle Communications Building

Layer 1 of 1	Description: Light gray soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Insect parts	Polyethylene fibers 5%		Chrysotile 2%

Sampled by: Client

Analyzed by: Alla Prysyazhnyuk

Reviewed by: Matt Macfarlane

Date: 09/04/2018

Date: 09/04/2018


Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle **NVL Batch Number** **1816744.00**
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Communications Building

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 7

Rush Samples _____

	Lab ID	Sample ID	Description	A/R
1	18086177	JCCB-1-01		A
2	18086178	JCCB-1-02		A
3	18086179	JCCB-2-01		A
4	18086180	JCCB-2-02		A
5	18086181	JCCB-3-01		A
6	18086182	JCCB-4-01		A
7	18086183	JCCB-4-02		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Alla Prysyzhnyuk		NVL	9/4/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions: _____

Date: 8/27/2018

Time: 4:16 PM

Entered By: Emily Schubert

ASBESTOS LABORATORY SERVICES



Company AECOM-Seattle

Address 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Project Manager Ms. Nicole Gladu

Phone (206) 438-2700

Cell (206) 240-0644

NVL Batch Number **1816744.00**

TAT 5 Days AH No

Rush TAT

Due Date 9/4/2018 Time 1:40 PM

Email nicole.gladu@aecom.com

Fax (866) 495-5288

Project Name/Number: 60537920.2.4a

Project Location: JC Boyle Communications Building

Subcategory PLM Bulk

Item Code ASB-02

Method EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 7

Rush Samples _____

	Lab ID	Sample ID	Description	A/R
1	18086177	JCCB-1-01		A
2	18086178	JCCB-1-02		A
3	18086179	JCCB-2-01		A
4	18086180	JCCB-2-02		A
5	18086181	JCCB-3-01		A
6	18086182	JCCB-4-01		A
7	18086183	JCCB-4-02		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				
Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	<i>Aria</i>		NVL	9/04/2018	10:49 AM
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					
Special Instructions:					

Entered By: Emily Schubert

Date: 8/27/2018

Time: 4:16 PM

1 of 1

4708 Aurora Ave North, Seattle, WA 98103

page 5 of 6

p 206.547.000 f 206.634.1936

www.nvllabs.com



ASBESTOS CHAIN OF CUSTODY

1816744

Turn A

- | | | |
|----------------------------------|-----------------------------------|----------------------------------|
| <input type="checkbox"/> 1 Hour | <input type="checkbox"/> 24 Hours | <input type="checkbox"/> 1 Days |
| <input type="checkbox"/> 2 Hours | <input type="checkbox"/> 2 Days | <input type="checkbox"/> 5 Days |
| <input type="checkbox"/> 4 Hours | <input type="checkbox"/> 3 Days | <input type="checkbox"/> 10 Days |

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM
Address 1111 Third Avenue Suite 1600
Seattle, WA 98101
Phone 206.438.2700

Project Manager Nicole Gladu
Cell ()
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number <u>60537920.2.4a</u>	Project Location <u>JC Boyle Communications Building</u>
<input type="checkbox"/> PCM Air (NIOSH 7400) <input type="checkbox"/> TEM (NIOSH 7402) <input type="checkbox"/> TEM (AHERA) <input type="checkbox"/> TEM (EPA Level II Modified) <input checked="" type="checkbox"/> PLM (EPA 600/R-93-116) <input type="checkbox"/> EPA 400 Points (600/R-93-116) <input type="checkbox"/> EPA 1000 Points (600/R-93-116) <input type="checkbox"/> PLM Gravimetry (600/R-93-116) <input type="checkbox"/> Asbestos in Vermiculite (EPA 600/R-04/004) <input type="checkbox"/> Asbestos in Sediment (EPA 1900 Points) <input type="checkbox"/> Asbestos Friable/Non-Friable (EPA 600/R-93/116) <input type="checkbox"/> Other _____	

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com☐ Call () ☐ Fax () ☐ Email _____Total Number of Samples 7

	Sample ID	Description	A/R
1	JCB-1-01		
2	1-02		
3	2-01		
4	2-02		
5	3-01		
6	4-01		
7	4-02		
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

Received by			Company	Date	Time
Analyzed by	ANNA KUSYAK		NVL Labs	8/27/18	1:40pm
Called by				9/04/2018	10:49am
Faxed/Email by					

September 4, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816752.00

Client Project: 60537920.2.4a
Location: JC Boyle Fire Protection & Electrical Transform

Dear Ms. Gladu,

Enclosed please find test results for the 7 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Macfarlane".

Matt Macfarlane, Asbestos Lab Supervisor



Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Fire Protection & Electrical Transform

Batch #: 1816752.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 7

Samples Analyzed: 7

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086253 **Client Sample #: JCFP-1-01**

Location: JC Boyle Fire Protection & Electrical Transform

Layer 1 of 1 **Description:** Red brittle material with paint

Non-Fibrous Materials:
Binder/Filler, Calcareous particles, Paint

Other Fibrous Materials:%
None Detected ND

Asbestos Type: %
None Detected ND

Lab ID: 18086254 **Client Sample #: JCFP-1-02**

Location: JC Boyle Fire Protection & Electrical Transform

Layer 1 of 1 **Description:** Red brittle material with paint

Non-Fibrous Materials:
Binder/Filler, Calcareous particles, Paint

Other Fibrous Materials:%
None Detected ND

Asbestos Type: %
None Detected ND

Lab ID: 18086255 **Client Sample #: JCFP-1-03**

Location: JC Boyle Fire Protection & Electrical Transform

Layer 1 of 1 **Description:** Red soft material with paint

Non-Fibrous Materials:
Binder/Filler, Calcareous particles, Paint

Other Fibrous Materials:%
None Detected ND

Asbestos Type: %
None Detected ND

Lab ID: 18086256 **Client Sample #: JCFP-2-01**

Location: JC Boyle Fire Protection & Electrical Transform

Layer 1 of 1 **Description:** Black rubbery soft material with red paint and inter fill-loose fibrous

Non-Fibrous Materials:
Resin/Binder, Paint

Other Fibrous Materials:%
Synthetic fibers 10%

Asbestos Type: %
None Detected ND

Lab ID: 18086257 **Client Sample #: JCFP-3-01**

Location: JC Boyle Fire Protection & Electrical Transform

Layer 1 of 1 **Description:** Brown fibrous material with rush

Non-Fibrous Materials:
Binder/Filler, Rust

Other Fibrous Materials:%
Cellulose 65%

Asbestos Type: %
None Detected ND

Sampled by: Client

Analyzed by: Alla Prysyazhnyuk

Reviewed by: Matt Macfarlane

Date: 09/04/2018

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Fire Protection & Electrical Transform

Batch #: 1816752.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 7

Samples Analyzed: 7

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086258 Client Sample #: JCFP-4-01

Location: JC Boyle Fire Protection & Electrical Transform

Layer 1 of 1 Description: Light gray sandy/brittle material

Non-Fibrous Materials:
Binder/Filler, Granules, Mica
Insect parts, Sand

Other Fibrous Materials:%
Spider silk <1%

Asbestos Type: %
None Detected ND

Lab ID: 18086259 Client Sample #: JCFP-5-01

Location: JC Boyle Fire Protection & Electrical Transform

Layer 1 of 1 Description: Off-white brittle/soft mastic

Non-Fibrous Materials:
Mastic/Binder, Insect parts

Other Fibrous Materials:%
Spider silk <1%

Asbestos Type: %
None Detected ND

Sampled by: Client

Analyzed by: Alla Prysyazhnyuk

Reviewed by: Matt Macfarlane

Date: 09/04/2018

Date: 09/04/2018


Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1816752.00
TAT 5 Days **AH** No
Rush TAT
Due Date 9/4/2018 **Time** 1:40 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Fire Protection & Electrical Transform

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 7

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086253	JCFP-1-01		A
2	18086254	JCFP-1-02		A
3	18086255	JCFP-1-03		A
4	18086256	JCFP-2-01		A
5	18086257	JCFP-3-01		A
6	18086258	JCFP-4-01		A
7	18086259	JCFP-5-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Alla Prysyzhnyuk		NVL	9/4/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:25 PM

Entered By: Fatima Khan



Laboratory | Management | Training

ASBESTOS CHAIN OF CUSTODY

Turn Around Time:

- ☐ 1 Hour ☐ 2 Days ☐ 5 Days
☐ 2 Hours ☐ 3 Days ☐ 10 Days
☐ 4 Hours

Please call for TAT less than 24 Hours

1816752

Company **AECOM**

Project Manager **Nicole Gladu**

Address **1111 Third Avenue Suite 1600**

Cell ()

Seattle, WA 98101

Email **nicole.gladu@aecom.com**

Phone **206.438.2700**

Fax (866) 495 - 5288

Project Name/Number **60537920.2.4a**

Project Location

JC Boyle *Fire Protection's Electrical Transform*

- ☐ PCM Air (NIOSH 7400) ☐ TEM (NIOSH 7402) ☐ TEM (AHERA) ☐ TEM (EPA Level II Modified)
☒ PLM (EPA 600/R-93-116) ☐ EPA 400 Points (600/R-93-116) ☐ EPA 1000 Points (600/R-93-116)
☐ PLM Gravimetry (600/R-93-116) ☐ Asbestos in Vermiculite (EPA 600/R-04/004) ☐ Asbestos in Sediment (EPA 1900 Points)
☐ Asbestos Friable/Non-Friable (EPA 600/R-93/116) ☐ Other

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**

☐ Call ()

☐ Fax ()

☐ Email

Total Number of Samples

7

	Sample ID	Description	A/R
1	JCFP-1-01		
2	1-2		
3	1-3		
4	2-01		
5	3-01		
6	4-01		
7	5-01		
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche	<i>[Signature]</i>	AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche	<i>[Signature]</i>	AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	<i>[Signature]</i>	<i>[Signature]</i>	Nulbbs	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

January 2, 2019



Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1900107.00

Client Project: 60537920 2.4
Location: JC Gate Control

Dear Ms. Gladu,

Enclosed please find test results for the 6 sample(s) submitted to our laboratory for analysis on 1/2/2019.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read 'Munaf Khan'.

Munaf Khan, Laboratory Director

The logo for NVLAP (National Voluntary Laboratory Accreditation Program). It consists of the letters 'NVLAP' in a large, stylized, outlined font. The 'P' has a unique shape with a loop at the bottom.

Lab Code: 102063-0

Enc.: Sample Results

Phone: 206 547.0100 | Fax: 206 634.1936 | Toll Free: 1.888.NVL.LABS (685.5227)
4708 Aurora Avenue North | Seattle, WA 98103-6516



Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Gate Control

Batch #: 1900107.00

Client Project #: 60537920 2.4

Date Received: 1/2/2019

Samples Received: 6

Samples Analyzed: 6

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 19000015 **Client Sample #: JCGCB-1-01**

Location: JC Gate Control

Layer 1 of 1 Description: Gray brittle material

Non-Fibrous Materials:
Binder/Filler, Fine particles, Calcareous particles

Other Fibrous Materials:%
Cellulose <1%

Asbestos Type: %
None Detected ND

Lab ID: 19000016 **Client Sample #: JCGCB-1-02**

Location: JC Gate Control

Layer 1 of 1 Description: Gray brittle material

Non-Fibrous Materials:
Binder/Filler, Calcareous particles, Fine particles

Other Fibrous Materials:%
Synthetic fibers <1%

Asbestos Type: %
None Detected ND

Lab ID: 19000017 **Client Sample #: JCGCB-2-01**

Location: JC Gate Control

Layer 1 of 1 Description: Red soft material

Non-Fibrous Materials:
Binder/Filler, Mica, Fine particles
Calcareous particles

Other Fibrous Materials:%
Cellulose 3%

Asbestos Type: %
None Detected ND

Lab ID: 19000018 **Client Sample #: JCGCB-2-02**

Location: JC Gate Control

Layer 1 of 1 Description: Red soft material

Non-Fibrous Materials:
Binder/Filler, Fine particles, Mica

Other Fibrous Materials:%
Cellulose 2%

Asbestos Type: %
None Detected ND

Lab ID: 19000019 **Client Sample #: JCGCB-3-01**

Location: JC Gate Control

Sampled by: Client

Analyzed by: Tiffany Cummings

Reviewed by: Munaf Khan

Date: 01/02/2019

Date: 01/02/2019

Munaf Khan, Laboratory Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Gate Control

Batch #: 1900107.00

Client Project #: 60537920 2.4

Date Received: 1/2/2019

Samples Received: 6

Samples Analyzed: 6

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 1	Description: Gray soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Fine particles, Paint flakes	Cellulose <1%		None Detected ND
		Synthetic fibers <1%		

Lab ID: 19000020 **Client Sample #: JCGCB-3-02**

Location: JC Gate Control

Layer 1 of 1	Description: Gray soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Fine particles, Paint flakes	Cellulose <1%		None Detected ND

Sampled by: Client

Analyzed by: Tiffany Cummings

Reviewed by: Munaf Khan

Date: 01/02/2019

Date: 01/02/2019

Munaf Khan, Laboratory Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

ASBESTOS LABORATORY SERVICES



Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1900107.00
TAT 4 Hrs **AH** No
Rush TAT
Due Date 1/2/2019 **Time** 12:50 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920 2.4 **Project Location:** JC Gate Control

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 6

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	19000015	JCGCB-1-01		A
2	19000016	JCGCB-1-02		A
3	19000017	JCGCB-2-01		A
4	19000018	JCGCB-2-02		A
5	19000019	JCGCB-3-01		A
6	19000020	JCGCB-3-02		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Emily Schubert		NVL	1/2/19	850
Analyzed by	Tiffany Cummings		NVL	1/2/19	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special verbal confirmation on the correct sample ID.

Instructions:

Date: 1/2/2019
 Time: 8:47 AM
 Entered By: Emily Schubert

CHAIN of CUSTODY SAMPLE LOG

1900107

Client AECOM-Seattle
Street 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

NVL Batch Number

Client Job Number 60537920 2.4

Total Samples 6

Turn Around Time ☐ 1 Hr ☐ 6 Hrs ☐ 3 Days ☐ 10 Days
☐ 2 Hrs ☐ 1 Day ☐ 4 Days
☒ 4 Hrs ☐ 2 Days ☐ 5 Days

Please call for TAT less than 24 Hrs

Project Manager Ms. Nicole Gladu

Project Location JC GATE CONTROL

Email address nicole.gladu@aecom.com

Phone: (206) 438-2700

Fax: (866) 495-5288

Cell (206) 240-0644

<input type="checkbox"/> Asbestos Air	<input type="checkbox"/> PCM (NIOSH 7400)	<input type="checkbox"/> TEM (NIOSH 7402)	<input type="checkbox"/> TEM (AHERA)	<input type="checkbox"/> TEM (EPA Level II)	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> Asbestos Bulk	<input checked="" type="checkbox"/> PLM (EPA/600/R-93/116)	<input type="checkbox"/> PLM (EPA Point Count)	<input type="checkbox"/> PLM (EPA Gravimetry)	<input type="checkbox"/> TEM BULK	
<input type="checkbox"/> Mold/Fungus	<input type="checkbox"/> Mold Air	<input type="checkbox"/> Mold Bulk	<input type="checkbox"/> Rotometer Calibration		
METALS	Det. Limit	Matrix	RCRA Metals	<input type="checkbox"/> All 8	Other Metals
<input type="checkbox"/> Total Metals	<input type="checkbox"/> FAA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Arsenic (As)	<input type="checkbox"/> Lead (Pb)	<input type="checkbox"/> All 3
<input type="checkbox"/> TCLP	<input type="checkbox"/> ICP (ppm)	<input type="checkbox"/> Drinking water	<input type="checkbox"/> Barium (Ba)	<input type="checkbox"/> Mercury (Hg)	<input type="checkbox"/> Copper (Cu)
<input type="checkbox"/> Cr 6	<input type="checkbox"/> GFAA (ppb)	<input type="checkbox"/> Dust/wipe (Area)	<input type="checkbox"/> Cadmium (Cd)	<input type="checkbox"/> Selenium (Se)	<input type="checkbox"/> Nickel (Ni)
		<input type="checkbox"/> Soil	<input type="checkbox"/> Chromium (Cr)	<input type="checkbox"/> Silver (Ag)	<input type="checkbox"/> Zinc (Zn)
<input type="checkbox"/> Other Types of Analysis	<input type="checkbox"/> Fiberglass	<input type="checkbox"/> Nuisance Dust	<input type="checkbox"/> Other (Specify)		
	<input type="checkbox"/> Silica	<input type="checkbox"/> Respirable Dust			

Condition of Package: ☐ Good ☐ Damaged (no spillage) ☐ Severe damage (spillage)

Seq. #	Lab ID	Client Sample Number	Comments (e.g Sample are, Sample Volume, etc)	A/R
1		JCGCB-1-01	Window	
2		1-01		
3		2-01	FS	
4		2-02		
5		3-01	Ex Caulk	
6		3-02		
7				
8				
9				
10				
11				
12				
13				
14				
15				

	Print Below	Sign Below	Company	Date	Time
Sampled by	S. MacKay		AECOM	12/26/18	1pm
Relinquished by	S. MacKay		AECOM	01/02/19	8:47am
Received by	Emily S		NVL	1/2/19	850
Analyzed by					
Results Called by					
Results Faxed by					

Special Instructions: Unless requested in writing, all samples will be disposed of two (2) weeks after analysis.

September 4, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816759.00

Client Project: 60537920.2.4a
Location: JC Boyle Hazmat Shed

Dear Ms. Gladu,

Enclosed please find test results for the 12 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Macfarlane".

Matt Macfarlane, Asbestos Lab Supervisor



Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Hazmat Shed

Batch #: 1816759.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 12

Samples Analyzed: 12

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086285 Client Sample #: JCHM-1-01

Location: JC Boyle Hazmat Shed

Layer 1 of 1 Description: Black soft asphaltic material

Non-Fibrous Materials:
Asphalt/Binder, Granules, Wood flakes

Other Fibrous Materials:%
Cellulose 2%

Asbestos Type: %
None Detected ND

Lab ID: 18086286 Client Sample #: JCHM-1-02

Location: JC Boyle Hazmat Shed

Layer 1 of 2 Description: Black soft asphaltic material

Non-Fibrous Materials:
Asphalt/Binder

Other Fibrous Materials:%
Cellulose 2%

Asbestos Type: %
None Detected ND

Layer 2 of 2 Description: Black asphaltic material

Non-Fibrous Materials:
Asphalt/Binder

Other Fibrous Materials:%
Cellulose 2%

Asbestos Type: %
Chrysotile 2%

Lab ID: 18086287 Client Sample #: JCHM-2-01

Location: JC Boyle Hazmat Shed

Layer 1 of 1 Description: Beige brittle/sandy material with off-white paint

Non-Fibrous Materials:
Binder/Filler, Granules, Mica
Paint, Sand

Other Fibrous Materials:%
Synthetic fibers 2%

Asbestos Type: %
None Detected ND

Lab ID: 18086288 Client Sample #: JCHM-2-02

Location: JC Boyle Hazmat Shed

Layer 1 of 1 Description: Beige brittle/sandy material with off-white paint

Non-Fibrous Materials:
Binder/Filler, Granules, Mica

Other Fibrous Materials:%
Synthetic fibers 2%

Asbestos Type: %
None Detected ND

Sampled by: Client

Analyzed by: Alla Prysyazhnyuk

Reviewed by: Matt Macfarlane

Date: 09/04/2018

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Hazmat Shed

Batch #: 1816759.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 12

Samples Analyzed: 12

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Insect parts, Paint, Sand

Spider silk <1%

Lab ID: 18086289 Client Sample #: JCHM-2-03

Location: JC Boyle Hazmat Shed

Layer 1 of 1 Description: Light gray brittle/sandy material with off-white paint

Non-Fibrous Materials:	Other Fibrous Materials: %
Binder/Filler, Granules, Mica	Synthetic fibers 2%
Paint, Sand	

Asbestos Type: %
None Detected ND

Lab ID: 18086290 Client Sample #: JCHM-3-01

Location: JC Boyle Hazmat Shed

Layer 1 of 1 Description: White soft material

Non-Fibrous Materials:	Other Fibrous Materials: %
Binder/Filler, Calcareous particles	Cellulose <1%

Asbestos Type: %
None Detected ND

Lab ID: 18086291 Client Sample #: JCHM-3-02

Location: JC Boyle Hazmat Shed

Layer 1 of 1 Description: Beige soft/brittle material with gray paint

Non-Fibrous Materials:	Other Fibrous Materials: %
Binder/Filler, Mineral grains, Fine particles	Wollastonite 2%
Insect parts, Paint	Cellulose 2%

Asbestos Type: %
Chrysotile <1%

Lab ID: 18086292 Client Sample #: JCHM-4-01

Location: JC Boyle Hazmat Shed

Layer 1 of 1 Description: Gray/silver paint

Non-Fibrous Materials:	Other Fibrous Materials: %
Paint, Fine particles, Metallic paint	None Detected ND

Asbestos Type: %
None Detected ND

Sampled by: Client

Analyzed by: Alla Prysyazhnyuk

Reviewed by: Matt Macfarlane

Date: 09/04/2018

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Hazmat Shed

Batch #: 1816759.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 12

Samples Analyzed: 12

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086293 Client Sample #: JCHM-4-02

Location: JC Boyle Hazmat Shed

Layer 1 of 1 Description: Orange/silver paint

Non-Fibrous Materials:
Paint, Fine particles, Metallic paint

Other Fibrous Materials:%
None Detected ND

Asbestos Type: %
None Detected ND

Lab ID: 18086294 Client Sample #: JCHM-4-03

Location: JC Boyle Hazmat Shed

Layer 1 of 1 Description: Orange/silver paint

Non-Fibrous Materials:
Paint, Fine particles, Metallic paint

Other Fibrous Materials:%
None Detected ND

Asbestos Type: %
None Detected ND

Lab ID: 18086295 Client Sample #: JCHM-5-01

Location: JC Boyle Hazmat Shed

Layer 1 of 1 Description: White soft material

Non-Fibrous Materials:
Binder/Filler, Fine particles

Other Fibrous Materials:%
None Detected ND

Asbestos Type: %
None Detected ND

Lab ID: 18086296 Client Sample #: JCHM-6-01

Location: JC Boyle Hazmat Shed

Layer 1 of 1 Description: Light gray compressed fibrous material

Non-Fibrous Materials:
Binder/Filler, Fine particles

Other Fibrous Materials:%
None Detected ND

Asbestos Type: %
Chrysotile 45%

Sampled by: Client

Analyzed by: Alla Prysyazhnyuk

Reviewed by: Matt Macfarlane

Date: 09/04/2018

Date: 09/04/2018


Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1816759.00
TAT 5 Days **AH** No
Rush TAT
Due Date 9/4/2018 **Time** 1:40 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Hazmat Shed

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 12

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086285	JCHM-1-01		A
2	18086286	JCHM-1-02		A
3	18086287	JCHM-2-01		A
4	18086288	JCHM-2-02		A
5	18086289	JCHM-2-03		A
6	18086290	JCHM-3-01		A
7	18086291	JCHM-3-02		A
8	18086292	JCHM-4-01		A
9	18086293	JCHM-4-02		A
10	18086294	JCHM-4-03		A
11	18086295	JCHM-5-01		A
12	18086296	JCHM-6-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Alla Prysyzhnyuk		NVL	9/4/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:41 PM

Entered By: Emily Schubert



1816759

ASBESTOS CHAIN OF CUSTODY

Turn Around

- | | | |
|----------------------------------|----------------------------------|--|
| <input type="checkbox"/> 1 Hour | <input type="checkbox"/> 2 Hours | <input type="checkbox"/> 3 Days |
| <input type="checkbox"/> 2 Hours | <input type="checkbox"/> 2 Days | <input checked="" type="checkbox"/> 5 Days |
| <input type="checkbox"/> 4 Hours | <input type="checkbox"/> 3 Days | <input type="checkbox"/> 10 Days |

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM
Address 1111 Third Avenue Suite 1600
Seattle, WA 98101
Phone 206.438.2700

Project Manager Nicole Gladu
Cell
Email nicole.gladu@aecom.com
Fax (866) 495 - 5288

Project Name/Number <u>60537920.2.4a</u>	Project Location <u>JC Boyle Hazmat shed</u>
--	--

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> PCM Air (NIOSH 7400) | <input type="checkbox"/> TEM (NIOSH 7402) | <input type="checkbox"/> TEM (AHERA) | <input type="checkbox"/> TEM (EPA Level II Modified) |
| <input checked="" type="checkbox"/> PLM (EPA 600/R-93-116) | <input type="checkbox"/> EPA 400 Points (600/R-93-116) | <input type="checkbox"/> EPA 1000 Points (600/R-93-116) | |
| <input type="checkbox"/> PLM Gravimetry (600/R-93-116) | <input type="checkbox"/> Asbestos in Vermiculite (EPA 600/R-04/004) | <input type="checkbox"/> Asbestos in Sediment (EPA 1900 Points) | |
| <input type="checkbox"/> Asbestos Friable/Non-Friable (EPA 600/R-93/116) | <input type="checkbox"/> Other <u> </u> | | |

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com



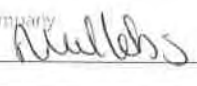
☐ Call () ☐ Fax () ☐ Email

Total Number of Samples 12

Sample ID	Description	A/R
1	JCHM-101	
2	102	
3	201	
4	202	
5	203	
6	301	
7	302	
8	401	
9	402	
10	403	
11	501	
12	601	
13		
14		
15		

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by				8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

September 4, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816741.00

Client Project: 60537920.2.4a
Location: JC Boyle Intake Structure/ Fish Ladder

Dear Ms. Gladu,

Enclosed please find test results for the 30 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Macfarlane".

Matt Macfarlane, Asbestos Lab Supervisor



Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

Enc.: Sample Results

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Intake Structure/ Fish Ladder

Batch #: 1816741.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086125 Client Sample #: JCIS-1-01

Layer 1 of 1 Description: Gray brittle material with debris

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Cement/Binder, Mineral grains, Debris

Cellulose 3%

None Detected ND

Lab ID: 18086126 Client Sample #: JCIS-2-01

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 1 Description: Black sticky material with mineral grains

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Asphalt/Binder, Fine grains, Mineral grains

Cellulose 2%

None Detected ND

Lab ID: 18086127 Client Sample #: JCIS-3-01

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 2 Description: Gray sandy rubbery material

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Binder/Filler, Sand

Cellulose <1%

None Detected ND

Layer 2 of 2 Description: Gray brittle material

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Cement/Binder, Mineral grains

Cellulose 1%

None Detected ND

Lab ID: 18086129 Client Sample #: JCIS-3-02

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 2 Description: Gray sandy rubbery material

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Binder/Filler, Sand

None Detected ND

None Detected ND

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Reviewed by: Matt Macfarlane

Date: 09/01/2018

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Intake Structure/ Fish Ladder

Batch #: 1816741.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 2 of 2	Description: Gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Cement/Binder, Mineral grains, Insect parts	Cellulose 3%		None Detected ND
		Spider silk 2%		

Lab ID: 18086130 Client Sample #: JCIS-3-03

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 1	Description: Gray sandy rubbery material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Sand	Cellulose 1%		None Detected ND

Lab ID: 18086131 Client Sample #: JCIS-3-04

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 1	Description: Gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Mineral grains, Organic debris	None Detected ND		None Detected ND

Lab ID: 18086132 Client Sample #: JCIS-4-01

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 1	Description: Black asphaltic mastic			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Miscellaneous particles	Cellulose 2%		None Detected ND

Lab ID: 18086133 Client Sample #: JCIS-4-02

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 1	Description: Black asphaltic mastic			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Miscellaneous particles	Cellulose 1%		None Detected ND

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 09/01/2018



Reviewed by: Matt Macfarlane

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Intake Structure/ Fish Ladder

Batch #: 1816741.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086134 Client Sample #: JCIS-5-01

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 2 Description: Silver paint

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Metallic paint, Miscellaneous particles

None Detected ND

None Detected ND

Layer 2 of 2 Description: Brown woven fibrous material with brittle brown mastic

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Mastic/Binder, Fine particles

Cellulose 76%

None Detected ND

Lab ID: 18086135 Client Sample #: JCIS-6-01

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 2 Description: Silver paint

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Metallic paint, Miscellaneous particles

None Detected ND

None Detected ND

Layer 2 of 2 Description: Green and brown paint

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Paint, Miscellaneous particles

None Detected ND

None Detected ND

Lab ID: 18086136 Client Sample #: JCIS-6-02

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 2 Description: Silver paint

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Metallic paint, Miscellaneous particles

None Detected ND

None Detected ND

Layer 2 of 2 Description: Green, orange and brown paint

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Paint, Miscellaneous particles

Cellulose <1%

None Detected ND

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 09/01/2018



Reviewed by: Matt Macfarlane

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Intake Structure/ Fish Ladder

Batch #: 1816741.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086137 Client Sample #: JCIS-6-03

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 2 Description: Silver paint

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Metallic paint, Miscellaneous particles

None Detected ND

None Detected ND

Layer 2 of 2 Description: Green, orange and brown paint

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Paint, Miscellaneous particles

None Detected ND

None Detected ND

Lab ID: 18086138 Client Sample #: JCIS-7-01

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 2 Description: White rubbery material with paint

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Caulking compound, Fine particles, Paint

None Detected ND

None Detected ND

Layer 2 of 2 Description: Brown rubbery material with paint and wood flakes

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Caulking compound, Fine particles, Paint

Cellulose 6%

None Detected ND

Lab ID: 18086139 Client Sample #: JCIS-7-02

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 2 Description: White rubbery material with paint

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Caulking compound, Fine particles, Paint

Cellulose 1%

None Detected ND

Layer 2 of 2 Description: Brown rubbery material with paint and wood flakes

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Caulking compound, Fine particles, Paint

Cellulose 9%

None Detected ND

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 09/01/2018



Reviewed by: Matt Macfarlane

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Intake Structure/ Fish Ladder

Batch #: 1816741.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086140 Client Sample #: JCIS-8-01

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 2 Description: Brown paper with black asphaltic mastic

Non-Fibrous Materials:	Other Fibrous Materials:%
Asphalt/Binder, Miscellaneous particles	Cellulose 86%
	Glass fibers 3%
	Spider silk 2%

Asbestos Type: %

None Detected ND

Layer 2 of 2 Description: Pink fibrous material

Non-Fibrous Materials:	Other Fibrous Materials:%
Miscellaneous particles	Glass fibers 95%

Asbestos Type: %

None Detected ND

Lab ID: 18086141 Client Sample #: JCIS-8-02

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 3 Description: Brown paper with black asphaltic mastic

Non-Fibrous Materials:	Other Fibrous Materials:%
Asphalt/Binder, Miscellaneous particles	Cellulose 81%
	Glass fibers 5%

Asbestos Type: %

None Detected ND

Layer 2 of 3 Description: Pink fibrous material

Non-Fibrous Materials:	Other Fibrous Materials:%
Miscellaneous particles	Glass fibers 97%

Asbestos Type: %

None Detected ND

Layer 3 of 3 Description: Off-white paint

Non-Fibrous Materials:	Other Fibrous Materials:%
Paint, Miscellaneous particles	Glass fibers 2%

Asbestos Type: %

None Detected ND

Lab ID: 18086142 Client Sample #: JCIS-8-03

Location: JC Boyle Intake Structure/ Fish Ladder

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Reviewed by: Matt Macfarlane

Date: 09/01/2018

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Intake Structure/ Fish Ladder

Batch #: 1816741.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 2	Description: Brown paper with black asphaltic mastic		
	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Asphalt/Binder, Miscellaneous particles	Cellulose 82%	None Detected ND
		Glass fibers 6%	

Layer 2 of 2	Description: Pink fibrous material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Miscellaneous particles, Insect parts	Glass fibers 94%	None Detected ND

Lab ID: 18086143 Client Sample #: JCIS-9-01

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 2	Description: Silver paint		
	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Metallic paint, Miscellaneous particles	Cellulose <1%	None Detected ND

Layer 2 of 2	Description: Gray and brown paint		
	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Paint, Miscellaneous particles	None Detected ND	None Detected ND

Lab ID: 18086144 Client Sample #: JCIS-9-02

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 2	Description: Silver paint		
	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Metallic paint, Miscellaneous particles	None Detected ND	None Detected ND

Layer 2 of 2	Description: Gray and brown paint		
	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Paint, Miscellaneous particles	Cellulose 4%	None Detected ND

Lab ID: 18086145 Client Sample #: JCIS-9-03

Location: JC Boyle Intake Structure/ Fish Ladder

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 09/01/2018



Reviewed by: Matt Macfarlane

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101**Attention: Ms. Nicole Gladu**

Project Location: JC Boyle Intake Structure/ Fish Ladder

Batch #: 1816741.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 2	Description: Silver paint	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: % None Detected ND
		Metallic paint, Miscellaneous particles	None Detected ND	
Layer 2 of 2	Description: Gray and brown paint	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: % None Detected ND
		Paint, Miscellaneous particles	Cellulose 3%	

Lab ID: 18086146 Client Sample #: JCIS-10-01

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 1	Description: Gray brittle material	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: % None Detected ND
		Binder/Filler, Fine particles, Mineral grains	Cellulose 2%	

Lab ID: 18086147 Client Sample #: JCIS-11-01

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 1	Description: Gray rubbery material with sand	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: % None Detected ND
		Caulking compound, Fine particles, Sand	Cellulose 3%	

Lab ID: 18086148 Client Sample #: JCIS-12-01

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 1	Description: Off-white brittle material	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: % None Detected ND
		Cement/Binder, Mineral grains, Organic debris	Cellulose 4%	

Lab ID: 18086150 Client Sample #: JCIS-12-02

Location: JC Boyle Intake Structure/ Fish Ladder

Sampled by: Client**Analyzed by:** Daniel Charbonneaux**Date:** 09/01/2018

Reviewed by: Matt Macfarlane**Date:** 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Intake Structure/ Fish Ladder

Batch #: 1816741.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 2	Description: Gray brittle material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Mineral grains, Paint	Cellulose 2%		None Detected ND
Layer 2 of 2	Description: Off-white brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Cement/Binder, Mineral grains	None Detected ND		None Detected ND

Lab ID: 18086151 Client Sample #: JCIS-13-01

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 2	Description: Silver paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Metallic paint, Miscellaneous particles	None Detected ND		None Detected ND
Layer 2 of 2	Description: Metal oxide with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Metal oxide, Paint	None Detected ND		None Detected ND

Lab ID: 18086152 Client Sample #: JCIS-13-02

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 2	Description: Silver paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Metallic paint, Miscellaneous particles	None Detected ND		None Detected ND
Layer 2 of 2	Description: Metal oxide			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Metal oxide, Miscellaneous particles	None Detected ND		None Detected ND

Lab ID: 18086153 Client Sample #: JCIS-13-03

Location: JC Boyle Intake Structure/ Fish Ladder

Comments: Insufficient silver paint for thorough analysis.

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 09/01/2018



Reviewed by: Matt Macfarlane

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Intake Structure/ Fish Ladder

Batch #: 1816741.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 1	Description: Silver paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %		Asbestos Type: %
	Metallic paint, Miscellaneous particles	None Detected ND		None Detected ND

Lab ID: 18086154 **Client Sample #: JCIS-14-01**

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 1	Description: Gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		Asbestos Type: %
	Ceramic/Binder, Fine grains	None Detected ND		None Detected ND

Lab ID: 18086155 **Client Sample #: JCIS-15-01**

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 2	Description: Silver paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %		Asbestos Type: %
	Metallic paint, Miscellaneous particles	Spider silk 1%		None Detected ND

Layer 2 of 2	Description: Metal oxide with paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %		Asbestos Type: %
	Metal oxide, Miscellaneous particles, Paint	None Detected ND		None Detected ND

Lab ID: 18086156 **Client Sample #: JCIS-15-02**

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 2	Description: Silver paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %		Asbestos Type: %
	Metallic paint, Miscellaneous particles	None Detected ND		None Detected ND

Layer 2 of 2	Description: Metal oxide with paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %		Asbestos Type: %
	Metal oxide, Miscellaneous particles, Paint	None Detected ND		None Detected ND

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 09/01/2018



Reviewed by: Matt Macfarlane

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1816741.00
TAT 5 Days **AH** No
Rush TAT
Due Date 9/4/2018 **Time** 1:40 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Intake Structure/ Fish Ladder

Subcategory PLM Bulk

Item Code ASB-02 **EPA 600/R-93-116 Asbestos by PLM <bulk>**

Total Number of Samples 30

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086125	JCIS-1-01		A
2	18086126	JCIS-2-01		A
3	18086127	JCIS-3-01		A
4	18086129	JCIS-3-02		A
5	18086130	JCIS-3-03		A
6	18086131	JCIS-3-04		A
7	18086132	JCIS-4-01		A
8	18086133	JCIS-4-02		A
9	18086134	JCIS-5-01		A
10	18086135	JCIS-6-01		A
11	18086136	JCIS-6-02		A
12	18086137	JCIS-6-03		A
13	18086138	JCIS-7-01		A
14	18086139	JCIS-7-02		A
15	18086140	JCIS-8-01		A
16	18086141	JCIS-8-02		A
17	18086142	JCIS-8-03		A
18	18086143	JCIS-9-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Daniel		NVL	9/1/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:09 PM

Entered By: Emily Schubert

Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1816741.00
TAT 5 Days **AH** No
Rush TAT
Due Date 9/4/2018 **Time** 1:40 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Intake Structure/ Fish Ladder

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 30

Rush Samples

	Lab ID	Sample ID	Description	A/R
19	18086144	JCIS-9-02		A
20	18086145	JCIS-9-03		A
21	18086146	JCIS-10-01		A
22	18086147	JCIS-11-01		A
23	18086148	JCIS-12-01		A
24	18086150	JCIS-12-02		A
25	18086151	JCIS-13-01		A
26	18086152	JCIS-13-02		A
27	18086153	JCIS-13-03		A
28	18086154	JCIS-14-01		A
29	18086155	JCIS-15-01		A
30	18086156	JCIS-15-02		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Daniel		NVL	9/1/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:09 PM

Entered By: Emily Schubert



1816741

ASBESTOS CHAIN OF CUSTODY

☐ 2 Hours ☐ 2 Days ☐ 4 Days
☐ 4 Hours ☐ 3 Days ☐ 5 Days
☐ 10 Days
Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM
Address 1111 Third Avenue Suite 1600
Seattle, WA 98101
Phone 206.438.2700

Project Manager Nicole Gladu
Cell C
Email nicole.gladu@aecom.com
Fax (866) 495 - 5288

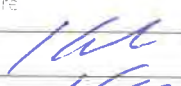

Project Name/Number	<u>60537920.2.4a</u>	Project Location	<u>JC Boyle Intake Structure / Fish ladder</u>
<input type="checkbox"/> PCM Air (NIOSH 7400)	<input type="checkbox"/> TEM (NIOSH 7402)	<input type="checkbox"/> TEM (AHERA)	<input type="checkbox"/> TEM (EPA Level II Modified)
<input checked="" type="checkbox"/> PLM (EPA 600/R-93-116)	<input type="checkbox"/> EPA 400 Points (600/R-93-116)	<input type="checkbox"/> EPA 1000 Points (600/R-93-116)	
<input type="checkbox"/> PLM Gravimetry (600/R-93-116)	<input type="checkbox"/> Asbestos in Vermiculite (EPA 600/R-04/004)	<input type="checkbox"/> Asbestos in Sediment (EPA 1900 Points)	
<input type="checkbox"/> Asbestos Friable/Non-Friable (EPA 600/R-93/116)	<input type="checkbox"/> Other _____		

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com


☐ Call _____ ☐ Fax _____ ☐ Email _____

Total Number of Samples 30

	Sample ID	Description	A/R
1	JCIS-1-01		
2	2-01		
3	3-01		
4	3-02		
5	3-03		
6	3-04		
7	4-01		
8	4-02		
9	5-01		
10	6-01		
11	6-02		
12	6-03		
13	7-01		
14	7-02		
15	8-01		

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Name	Signature	Company	Date	Time
Received by	Estimation		Nullabs	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					



ASBESTOS CHAIN OF CUSTODY

1816741

Turn Around Time

- ☐ 1 Hour ☐ 24 Hours ☐ 5 Days
☐ 2 Hours ☐ 2 Days ☐ 10 Days
☐ 4 Hours ☐ 3 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM
Address 1111 Third Avenue Suite 1600
Seattle, WA 98101
Phone 206.438.2700

Project/Manager Nicole Gladu
Cell () () ()
Email nicole.gladu@aecom.com
Fax (866) 495 - 5288

Project Name/Number 60537920.2.4a Project Location JC Boyle Intake Structure / Fish Ladder

- ☐ PCM Air (NIOSH 7400) ☐ TEM (NIOSH 7402) ☐ TEM (AHERA) ☐ TEM (EPA Level II Modified)
☒ PLM (EPA 600/R-93-116) ☐ EPA 400 Points (600/R-93-116) ☐ EPA 1000 Points (600/R-93-116)
☐ PLM Gravimetry (600/R-93-116) ☐ Asbestos in Vermiculite (EPA 600/R-04/004) ☐ Asbestos in Sediment (EPA 1900 Points)
☐ Asbestos Friable/Non-Friable (EPA 600/R-93/116) ☐ Other _____

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com

☐ Call () () () ☐ Fax () () () ☐ Email _____

Total Number of Samples 30

Sample ID	Description	A/R
1	JCIS-8-02	
2	JCIS-8-03	
3	9-01	
4	9-02	
5	9-03	
6	10-01	
7	11-01	
8	12-01	
9	12-02	
10	13-01	
11	13-02	
12	13-03	
13	14-01	
14	15-01	
15	15-02	

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	Johnathon		Nullers	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

August 31, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816740.00

Client Project: 60537920.2.4a
Location: JC Boyle Intake Structure/ Fish Ladder

Dear Ms. Gladu,

Enclosed please find test results for the 3 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Macfarlane".

Matt Macfarlane, Asbestos Lab Supervisor



Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Intake Structure/ Fish Ladder

Batch #: 1816740.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 3

Samples Analyzed: 3

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086118 Client Sample #: JCIS-15-03

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 1 Description: Soft flaky material with metallic paint

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: %
Metallic paint, Caulking compound, Fine particles	Cellulose 1%	None Detected ND

Lab ID: 18086119 Client Sample #: JCIS-16-01

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 1 Description: Black asphaltic fibrous material with paint

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: %
Asphalt/Binder, Fine particles, Paint	Cellulose 12%	None Detected ND

Lab ID: 18086120 Client Sample #: JCIS-16-02

Location: JC Boyle Intake Structure/ Fish Ladder

Layer 1 of 1 Description: Black asphaltic fibrous material with paint

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: %
Asphalt/Binder, Fine particles, Paint	Cellulose 13%	None Detected ND

Sampled by: Client

Analyzed by: Matthew McCallum

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018


Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle **NVL Batch Number** 1816740.00
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Intake Structure/ Fish Ladder

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 3

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086118	JCIS-15-03		A
2	18086119	JCIS-16-01		A
3	18086120	JCIS-16-02		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Matthew McCallum		NVL	8/31/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:06 PM

Entered By: Emily Schubert



1816740

ASBESTOS CHAIN OF CUSTODY

Turn Around Time

- | | | |
|----------------------------------|-----------------------------------|--|
| <input type="checkbox"/> 1 Hour | <input type="checkbox"/> 24 Hours | <input type="checkbox"/> 1 Days |
| <input type="checkbox"/> 2 Hours | <input type="checkbox"/> 2 Days | <input checked="" type="checkbox"/> 5 Days |
| <input type="checkbox"/> 4 Hours | <input type="checkbox"/> 3 Days | <input type="checkbox"/> 10 Days |

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company **AECOM**
Address **1111 Third Avenue Suite 1600**
Seattle, WA 98101
Phone **206.438.2700**

Project Manager **Nicole Gladu**
Cell **() -**
Email **nicole.gladu@aecom.com**
Fax **(866) 495 - 5288**

Project Name/Number 60537920.2.4a	Project Location JC Boyle Intake Structure / Fish Hdder
<input type="checkbox"/> PCM Air (NIOSH 7400) <input type="checkbox"/> TEM (NIOSH 7402) <input type="checkbox"/> TEM (AHERA) <input type="checkbox"/> TEM (EPA Level II Modified)	
<input checked="" type="checkbox"/> PLM (EPA 600/R-93-116) <input type="checkbox"/> EPA 400 Points (600/R-93-116) <input type="checkbox"/> EPA 1000 Points (600/R-93-116)	
<input type="checkbox"/> PLM Gravimetry (600/R-93-116) <input type="checkbox"/> Asbestos in Vermiculite (EPA 600/R-04/004) <input type="checkbox"/> Asbestos in Sediment (EPA 1900 Points)	
<input type="checkbox"/> Asbestos Friable/Non-Friable (EPA 600/R-93/116) <input type="checkbox"/> Other	

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**

☐ Call **() -** ☐ Fax **() -** ☐ Email

Total Number of Samples **33**

	Sample ID	Description	A/R
1	JLIS-15-03		
2	1 16-01		
3	1 16-02		
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	Helmarthom		Nulibx	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

August 31, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816738.00

Client Project: 60537920.2.4a
Location: JC Boyle Office Warehouse

Dear Ms. Gladu,

Enclosed please find test results for the 36 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Macfarlane".

Matt Macfarlane, Asbestos Lab Supervisor



Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

Enc.: Sample Results

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Office Warehouse

Batch #: 1816738.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 36

Samples Analyzed: 36

Method: EPA/600/R-93/116
& EPA/600/M4-82-020**Lab ID: 18086081 Client Sample #: JCOW-1-01**

Location: JC Boyle Office Warehouse

Layer 1 of 2 Description: Gray sheet vinyl

Non-Fibrous Materials:

Other Fibrous Materials:%

Asbestos Type: %

Vinyl/Binder

None Detected ND

None Detected ND**Layer 2 of 2 Description:** Gray fibrous backing with mastic (on wood)

Non-Fibrous Materials:

Other Fibrous Materials:%

Asbestos Type: %

Binder/Filler, Mastic/Binder

Cellulose 47%

None Detected ND

Glass fibers 21%

Lab ID: 18086082 Client Sample #: JCOW-1-02

Location: JC Boyle Office Warehouse

Layer 1 of 3 Description: Gray sheet vinyl

Non-Fibrous Materials:

Other Fibrous Materials:%

Asbestos Type: %

Vinyl/Binder

None Detected ND

None Detected ND**Layer 2 of 3 Description:** Tan fibrous backing with mastic (on wood)

Non-Fibrous Materials:

Other Fibrous Materials:%

Asbestos Type: %

Binder/Filler

Cellulose 40%

None Detected ND

Glass fibers 21%

Layer 3 of 3 Description: Black asphaltic fibrous material

Non-Fibrous Materials:

Other Fibrous Materials:%

Asbestos Type: %

Asphalt/Binder, Binder/Filler

Cellulose 74%

None Detected ND**Lab ID: 18086083 Client Sample #: JCOW-1-03**

Location: JC Boyle Office Warehouse

Sampled by: Client**Analyzed by:** Welly Hsieh**Date:** 08/31/2018

Reviewed by: Matt Macfarlane**Date:** 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Office Warehouse

Batch #: 1816738.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 36

Samples Analyzed: 36

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 2	Description: Gray sheet vinyl	Non-Fibrous Materials: Vinyl/Binder	Other Fibrous Materials:% None Detected ND	Asbestos Type: % None Detected ND
Layer 2 of 2	Description: Gray fibrous backing with mastic (on wood)	Non-Fibrous Materials: Mastic/Binder, Binder/Filler	Other Fibrous Materials:% Cellulose 48% Glass fibers 16%	Asbestos Type: % None Detected ND

Lab ID: 18086084 **Client Sample #: JCOW-2-01**

Location: JC Boyle Office Warehouse

Layer 1 of 1	Description: Gray fibrous material with paint	Non-Fibrous Materials: Binder/Filler, Fine particles, Perlite Paint	Other Fibrous Materials:% Cellulose 68% Glass fibers 4%	Asbestos Type: % None Detected ND
---------------------	--	---	---	--

Lab ID: 18086085 **Client Sample #: JCOW-2-02**

Location: JC Boyle Office Warehouse

Layer 1 of 1	Description: Gray fibrous material with paint	Non-Fibrous Materials: Binder/Filler, Fine particles, Perlite Paint, Wood flakes	Other Fibrous Materials:% Cellulose 65% Glass fibers 3%	Asbestos Type: % None Detected ND
---------------------	--	--	---	--

Lab ID: 18086086 **Client Sample #: JCOW-2-03**

Location: JC Boyle Office Warehouse

Layer 1 of 1	Description: Gray fibrous material with paint	Non-Fibrous Materials: Binder/Filler, Fine particles, Perlite	Other Fibrous Materials:% Cellulose 67%	Asbestos Type: % None Detected ND
---------------------	--	--	--	--

Sampled by: Client

Analyzed by: Welly Hsieh

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Office Warehouse

Batch #: 1816738.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 36

Samples Analyzed: 36

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

	Paint	Glass fibers	6%
Lab ID: 18086087 Client Sample #: JCOW-3-01			
Location: JC Boyle Office Warehouse			
Layer 1 of 3	Description: Gray rubbery material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Rubber/Binder	None Detected ND	None Detected ND
Layer 2 of 3	Description: White soft mastic		
	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Mastic/Binder	None Detected ND	None Detected ND
Layer 3 of 3	Description: White compacted powdery material with paint		
	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Calcareous binder, Paint	None Detected ND	None Detected ND
Lab ID: 18086088 Client Sample #: JCOW-3-02			
Location: JC Boyle Office Warehouse			
Layer 1 of 3	Description: Gray rubbery material		
	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Rubber/Binder	None Detected ND	None Detected ND
Layer 2 of 3	Description: White soft mastic		
	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Mastic/Binder, Insect parts	Cellulose <1%	None Detected ND
		Spider silk 2%	
Layer 3 of 3	Description: White compacted powdery material with paint		
	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Calcareous binder, Paint	None Detected ND	None Detected ND

Sampled by: Client

Analyzed by: Welly Hsieh

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Office Warehouse

Batch #: 1816738.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 36

Samples Analyzed: 36

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086089 Client Sample #: JCOW-4-01

Location: JC Boyle Office Warehouse

Layer 1 of 2 Description: White compacted powdery material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%
Calcareous binder, Paint	Cellulose <1%

Asbestos Type: %
None Detected ND

Layer 2 of 2 Description: White chalky material with paper

Non-Fibrous Materials:	Other Fibrous Materials:%
Gypsum/Binder, Binder/Filler	Cellulose 21%
	Glass fibers 4%

Asbestos Type: %
None Detected ND

Lab ID: 18086090 Client Sample #: JCOW-4-02

Location: JC Boyle Office Warehouse

Layer 1 of 2 Description: White textured powdery material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%
Calcareous binder, Paint	Cellulose 2%

Asbestos Type: %
None Detected ND

Layer 2 of 2 Description: White chalky material with paper

Non-Fibrous Materials:	Other Fibrous Materials:%
Gypsum/Binder, Binder/Filler	Cellulose 26%

Asbestos Type: %
None Detected ND

Lab ID: 18086091 Client Sample #: JCOW-4-03

Location: JC Boyle Office Warehouse

Layer 1 of 2 Description: White compacted powdery material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%
Calcareous binder, Paint	None Detected ND

Asbestos Type: %
None Detected ND

Layer 2 of 2 Description: White chalky material with paper

Non-Fibrous Materials:	Other Fibrous Materials:%
Gypsum/Binder, Binder/Filler	Cellulose 23%

Asbestos Type: %
None Detected ND

Sampled by: Client

Analyzed by: Welly Hsieh

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Office Warehouse

Batch #: 1816738.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 36

Samples Analyzed: 36

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Glass fibers 5%

Lab ID: 18086092 Client Sample #: JCOW-4-04

Location: JC Boyle Office Warehouse

Layer 1 of 2 Description: White compacted powdery material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%
Calcareous binder, Paint	None Detected ND

Asbestos Type: %
None Detected ND

Layer 2 of 2 Description: White chalky material with paper

Non-Fibrous Materials:	Other Fibrous Materials:%
Gypsum/Binder, Binder/Filler	Cellulose 21%
	Glass fibers 3%

Asbestos Type: %
None Detected ND

Lab ID: 18086093 Client Sample #: JCOW-4-05

Location: JC Boyle Office Warehouse

Layer 1 of 2 Description: White compacted powdery material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%
Calcareous binder, Paint	None Detected ND

Asbestos Type: %
None Detected ND

Layer 2 of 2 Description: White chalky material with paper

Non-Fibrous Materials:	Other Fibrous Materials:%
Gypsum/Binder, Binder/Filler	Cellulose 25%
	Glass fibers 2%

Asbestos Type: %
None Detected ND

Lab ID: 18086094 Client Sample #: JCOW-4-06

Location: JC Boyle Office Warehouse

Layer 1 of 2 Description: White compacted powdery material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%
Calcareous binder, Paint	Cellulose <1%

Asbestos Type: %
None Detected ND

Sampled by: Client

Analyzed by: Welly Hsieh

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Office Warehouse

Batch #: 1816738.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 36

Samples Analyzed: 36

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 2 of 2	Description: White chalky material with paper			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Gypsum/Binder, Binder/Filler	Cellulose 22%		None Detected ND
		Glass fibers 5%		

Lab ID: 18086095 **Client Sample #: JCOW-6-01**

Location: JC Boyle Office Warehouse

Layer 1 of 2	Description: White soft elastic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Caulking compound	None Detected ND		None Detected ND

Layer 2 of 2	Description: White compacted powdery material with paint and paper			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Calcareous binder, Binder/Filler, Paint	Cellulose 30%		None Detected ND

Lab ID: 18086096 **Client Sample #: JCOW-7-01**

Location: JC Boyle Office Warehouse

Layer 1 of 2	Description: Black plastic			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Plastic	None Detected ND		None Detected ND

Layer 2 of 2	Description: Yellow soft adhesive			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Adhesive/Binder	None Detected ND		None Detected ND

Lab ID: 18086097 **Client Sample #: JCOW-10-01**

Location: JC Boyle Office Warehouse

Layer 1 of 2	Description: Tan fibrous material with mastic and metal foil			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Metal foil, Mastic/Binder	Cellulose 52%		None Detected ND

Sampled by: Client

Analyzed by: Welly Hsieh

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Office Warehouse

Batch #: 1816738.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 36

Samples Analyzed: 36

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 2 of 2	Description: Off-white foamy material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Styrofoam	None Detected	ND	None Detected ND

Lab ID: 18086098 **Client Sample #: JCOW-10-02**

Location: JC Boyle Office Warehouse

Layer 1 of 2	Description: Tan fibrous material with mastic and metal foil			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Mastic/Binder, Metal foil	Cellulose	54%	None Detected ND

Layer 2 of 2	Description: Off-white foamy material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Styrofoam	None Detected	ND	None Detected ND

Lab ID: 18086099 **Client Sample #: JCOW-10-03**

Location: JC Boyle Office Warehouse

Layer 1 of 2	Description: Tan fibrous material with mastic and metal foil			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Mastic/Binder, Metal foil	Cellulose	51%	None Detected ND

Layer 2 of 2	Description: Off-white foamy material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Styrofoam	None Detected	ND	None Detected ND

Lab ID: 18086100 **Client Sample #: JCOW-11-01**

Location: JC Boyle Office Warehouse

Layer 1 of 2	Description: Black asphaltic mastic with paper			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Mastic/Binder, Binder/Filler	Cellulose	36%	None Detected ND

Sampled by: Client

Analyzed by: Welly Hsieh

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Office Warehouse

Batch #: 1816738.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 36

Samples Analyzed: 36

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 2 of 2	Description: Pink fibrous material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler	Glass fibers 90%		None Detected ND

Lab ID: 18086101 **Client Sample #: JCOW-11-02**

Location: JC Boyle Office Warehouse

Layer 1 of 2	Description: Black asphaltic mastic with paper			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Binder/Filler	Cellulose 31%		None Detected ND

Layer 2 of 2	Description: Pink fibrous material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler	Glass fibers 92%		None Detected ND

Lab ID: 18086102 **Client Sample #: JCOW-11-03**

Location: JC Boyle Office Warehouse

Layer 1 of 2	Description: Black asphaltic mastic with paper			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Binder/Filler	Cellulose 32%		None Detected ND

Layer 2 of 2	Description: Pink fibrous material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler	Glass fibers 94%		None Detected ND

Lab ID: 18086103 **Client Sample #: JCOW-11-04**

Location: JC Boyle Office Warehouse

Layer 1 of 2	Description: Black asphaltic mastic with paper and paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Binder/Filler, Paint	Cellulose 30%		None Detected ND

Sampled by: Client

Analyzed by: Welly Hsieh

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Office Warehouse

Batch #: 1816738.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 36

Samples Analyzed: 36

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 2 of 2	Description: Pink fibrous material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler	Glass fibers 90%		None Detected ND

Lab ID: 18086104 Client Sample #: JCOW-12-01

Location: JC Boyle Office Warehouse

Layer 1 of 2	Description: Black asphaltic mastic with paper and paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Binder/Filler, Paint	Cellulose 35%		None Detected ND

Layer 2 of 2	Description: Yellow fibrous material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler	Glass fibers 92%		None Detected ND

Lab ID: 18086105 Client Sample #: JCOW-12-02

Location: JC Boyle Office Warehouse

Layer 1 of 2	Description: Black asphaltic mastic with paper and paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Binder/Filler, Paint	Cellulose 34%		None Detected ND

Layer 2 of 2	Description: Yellow fibrous material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler	Glass fibers 87%		None Detected ND

Lab ID: 18086106 Client Sample #: JCOW-12-03

Location: JC Boyle Office Warehouse

Layer 1 of 2	Description: Black asphaltic mastic with paper and paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Binder/Filler, Paint	Cellulose 36%		None Detected ND

Sampled by: Client

Analyzed by: Welly Hsieh

Date: 08/31/2018



Reviewed by: Matt Macfarlane

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Office Warehouse

Batch #: 1816738.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 36

Samples Analyzed: 36

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 2 of 2	Description: Yellow fibrous material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler	Glass fibers 93%		None Detected ND

Lab ID: 18086107 **Client Sample #: JCOW-13-01**

Location: JC Boyle Office Warehouse

Layer 1 of 1	Description: Black asphaltic soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Fine particles	Cellulose <1%		None Detected ND

Lab ID: 18086108 **Client Sample #: JCOW-13-02**

Location: JC Boyle Office Warehouse

Layer 1 of 1	Description: Black asphaltic soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Fine particles	Cellulose 2%		None Detected ND

Lab ID: 18086109 **Client Sample #: JCOW-14-01**

Location: JC Boyle Office Warehouse

Layer 1 of 1	Description: Off-white putty material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Putty Compound, Calcareous particles, Paint	Cellulose <1%		None Detected ND

Lab ID: 18086110 **Client Sample #: JCOW-14-02**

Location: JC Boyle Office Warehouse

Layer 1 of 1	Description: Off-white putty material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Putty Compound, Calcareous particles, Paint	None Detected ND		None Detected ND

Lab ID: 18086111 **Client Sample #: JCOW-15-01**

Location: JC Boyle Office Warehouse

Sampled by: Client

Analyzed by: Welly Hsieh

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Office Warehouse

Batch #: 1816738.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 36

Samples Analyzed: 36

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 1	Description: Black asphaltic fibrous felt			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Binder/Filler, Insect parts	Cellulose 63%		None Detected ND

Lab ID: 18086112 **Client Sample #: JCOW-15-02**

Location: JC Boyle Office Warehouse

Layer 1 of 1	Description: Black asphaltic fibrous felt with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Binder/Filler, Paint	Cellulose 68%		None Detected ND

Lab ID: 18086113 **Client Sample #: JCOW-16-01**

Location: JC Boyle Office Warehouse

Layer 1 of 1	Description: Black asphaltic fibrous felt			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Binder/Filler	Cellulose 62%		None Detected ND

Lab ID: 18086114 **Client Sample #: JCOW-16-02**

Location: JC Boyle Office Warehouse

Layer 1 of 1	Description: Black asphaltic fibrous felt			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Binder/Filler	Cellulose 65%		None Detected ND

Lab ID: 18086115 **Client Sample #: JCOW-17-01**

Location: JC Boyle Office Warehouse

Layer 1 of 1	Description: Black asphaltic fibrous material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Binder/Filler	Cellulose 74%		None Detected ND

Lab ID: 18086116 **Client Sample #: JCOW-17-02**

Location: JC Boyle Office Warehouse

Sampled by: Client**Analyzed by:** Welly Hsieh**Date:** 08/31/2018

Reviewed by: Matt Macfarlane**Date:** 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Office Warehouse

Batch #: 1816738.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 36

Samples Analyzed: 36

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 1 **Description:** Black asphaltic fibrous material

Non-Fibrous Materials:
Asphalt/Binder, Binder/Filler

Other Fibrous Materials:%
Cellulose 78%

Asbestos Type: %
None Detected ND

Sampled by: Client

Analyzed by: Welly Hsieh

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018


Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1816738.00
TAT 5 Days **AH** No
Rush TAT
Due Date 9/4/2018 **Time** 1:40 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Office Warehouse

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 36

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086081	JCOW-1-01		A
2	18086082	JCOW-1-02		A
3	18086083	JCOW-1-03		A
4	18086084	JCOW-2-01		A
5	18086085	JCOW-2-02		A
6	18086086	JCOW-2-03		A
7	18086087	JCOW-3-01		A
8	18086088	JCOW-3-02		A
9	18086089	JCOW-4-01		A
10	18086090	JCOW-4-02		A
11	18086091	JCOW-4-03		A
12	18086092	JCOW-4-04		A
13	18086093	JCOW-4-05		A
14	18086094	JCOW-4-06		A
15	18086095	JCOW-6-01		A
16	18086096	JCOW-7-01		A
17	18086097	JCOW-10-01		A
18	18086098	JCOW-10-02		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Welly Hsieh		NVL	8/31/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 3:56 PM

Entered By: Emily Schubert

Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1816738.00
TAT 5 Days **AH** No
Rush TAT
Due Date 9/4/2018 **Time** 1:40 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Office Warehouse

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 36

Rush Samples

	Lab ID	Sample ID	Description	A/R
19	18086099	JCOW-10-03		A
20	18086100	JCOW-11-01		A
21	18086101	JCOW-11-02		A
22	18086102	JCOW-11-03		A
23	18086103	JCOW-11-04		A
24	18086104	JCOW-12-01		A
25	18086105	JCOW-12-02		A
26	18086106	JCOW-12-03		A
27	18086107	JCOW-13-01		A
28	18086108	JCOW-13-02		A
29	18086109	JCOW-14-01		A
30	18086110	JCOW-14-02		A
31	18086111	JCOW-15-01		A
32	18086112	JCOW-15-02		A
33	18086113	JCOW-16-01		A
34	18086114	JCOW-16-02		A
35	18086115	JCOW-17-01		A
36	18086116	JCOW-17-02		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Welly Hsieh		NVL	8/31/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 3:56 PM

Entered By: Emily Schubert



ASBESTOS CHAIN OF CUSTODY

1816738

Turn Around Time

☐ 1 Hour☐ 2 Hours☐ 4 Hours☐ 2 Days☐ 3 Days☐ 5 Days☐ 10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company **AECOM**Project Manager **Nicole Gladu**Address **1111 Third Avenue Suite 1600**

Cell ()

Seattle, WA 98101Email **nicole.gladu@aecom.com**Phone **206.438.2700**

Fax (866) 495 - 5288

Project Name/Number **60537920.2.4a**

Project Location

JC Boyle OFFICE WAREHOUSE

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> PCM Air (NIOSH 7400) | <input type="checkbox"/> TEM (NIOSH 7402) | <input type="checkbox"/> TEM (AHERA) | <input type="checkbox"/> TEM (EPA Level II Modified) |
| <input checked="" type="checkbox"/> PLM (EPA 600/R-93-116) | <input type="checkbox"/> EPA 400 Points (600/R-93-116) | <input type="checkbox"/> EPA 1000 Points (600/R-93-116) | |
| <input type="checkbox"/> PLM Gravimetry (600/R-93-116) | <input type="checkbox"/> Asbestos in Vermiculite (EPA 600/R-04/004) | <input type="checkbox"/> Asbestos in Sediment (EPA 1900 Points) | |
| <input type="checkbox"/> Asbestos Friable/Non-Friable (EPA 600/R-93/116) | <input type="checkbox"/> Other | | |

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**☐ Call ()☐ Fax ()☐ EmailTotal Number of Samples **36**

Sample ID	Description	A/R
1 JCOW-1-01		
2 1-02		
3 1-03		
4 2-01		
5 2-02		
6 2-03		
7 3-01		
8 3-02		
9 4-01		
10 4-02		
11 4-03		
12 4-04		
13 4-05		
14 4-06		
15 6-01		

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	12pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	Kim Riche		NVL Labs	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					



ASBESTOS CHAIN OF CUSTODY

1816738

Turn Around Time

- ☐ 1 Hour ☐ 24 Hours ☐ 4 Days
☐ 2 Hours ☐ 2 Days ☒ 5 Days
☐ 4 Hours ☐ 3 Days ☐ 10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company **AECOM**
Address **1111 Third Avenue Suite 1600**
Seattle, WA 98101
Phone **206.438.2700**

Project Manager **Nicole Gladu**
Cell **() - () - ()**
Email **nicole.gladu@aecom.com**
Fax **(866) 495 - 5288**

Project Name/Number 60537920.2.4a	Project Location JC Boyle OFFICE WAREHOUSE
<input type="checkbox"/> PCM Air (NIOSH 7400) <input type="checkbox"/> TEM (NIOSH 7402) <input type="checkbox"/> TEM (AHERA) <input type="checkbox"/> TEM (EPA Level II Modified) <input checked="" type="checkbox"/> PLM (EPA 600/R-93-116) <input type="checkbox"/> EPA 400 Points (600/R-93-116) <input type="checkbox"/> EPA 1000 Points (600/R-93-116) <input type="checkbox"/> PLM Gravimetry (600/R-93-116) <input type="checkbox"/> Asbestos in Vermiculite (EPA 600/R-04/004) <input type="checkbox"/> Asbestos in Sediment (EPA 1900 Points) <input type="checkbox"/> Asbestos Friable/Non-Friable (EPA 600/R-93/116) <input type="checkbox"/> Other _____	

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**

☐ Call () - () - () ☐ Fax () - () - () ☐ Email _____

Total Number of Samples 36

	Sample ID	Description	A/R
1	JCOW-701		
2	10-01		
3	10-02		
4	10-03		
5	11-01		
6	11-02		
7	11-03		
8	11-04		
9	12-01		
10	12-02		
11	12-03		
12	13-01		
13	13-02		
14	14-01		
15	14-02		

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	Shannon Mackay		Nuvlabs	8/27/18	1:30pm
Analyzed by					
Called by					
Faxed/Email by					



ASBESTOS CHAIN OF CUSTODY

1816738

Turn Around Time

- | | | |
|----------------------------------|----------------------------------|----------------------------------|
| <input type="checkbox"/> 1 Hour | <input type="checkbox"/> 2 Hours | <input type="checkbox"/> 4 Days |
| <input type="checkbox"/> 2 Hours | <input type="checkbox"/> 2 Days | <input type="checkbox"/> 5 Days |
| <input type="checkbox"/> 4 Hours | <input type="checkbox"/> 3 Days | <input type="checkbox"/> 10 Days |

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company **AECOM**
Address **1111 Third Avenue Suite 1600**
Seattle, WA 98101
Phone **206.438.2700**

Project Manager **Nicole Gladu**
Cell () -
Email **nicole.gladu@aecom.com**
Fax (866) 495 - 5288

Project Name/Number 60537920.2.4a	Project Location JC Boyle OFFICE WAREHOUSE
<input type="checkbox"/> PCM Air (NIOSH 7400) <input type="checkbox"/> TEM (NIOSH 7402) <input type="checkbox"/> TEM (AHERA) <input type="checkbox"/> TEM (EPA Level II Modified)	
<input checked="" type="checkbox"/> PLM (EPA 600/R-93-116) <input type="checkbox"/> EPA 400 Points (600/R-93-116) <input type="checkbox"/> EPA 1000 Points (600/R-93-116)	
<input type="checkbox"/> PLM Gravimetry (600/R-93-116) <input type="checkbox"/> Asbestos in Vermiculite (EPA 600/R-04/004) <input type="checkbox"/> Asbestos in Sediment (EPA 1900 Points)	
<input type="checkbox"/> Asbestos Friable/Non-Friable (EPA 600/R-93/116) <input type="checkbox"/> Other	

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**

☐ Call () - ☐ Fax () - ☐ Email

Total Number of Samples 36

	Sample ID	Description	A/R
1	JCOW-15-01		
2	15-02		
3	16-01		
4	16-02		
5	17-01		
6	17-02		
7			
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	Helina Mathiam		NVILabs	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

August 30, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816753.00

Client Project: 60537920.2.4a
Location: JC Boyle Boneyard

Dear Ms. Gladu,

Enclosed please find test results for the 4 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Ly".

Nick Ly, Technical Director



Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.

4708 Aurora Ave N, Seattle, WA 98103

p 206.547.0100 | f 206.634.1936

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Boneyard

Batch #: 1816753.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 4

Samples Analyzed: 4

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086260 Client Sample #: JCBY-1-01

Location: JC Boyle Boneyard

Layer 1 of 2 Description: Red soft rubbery material

Non-Fibrous Materials:
Rubber/Binder, Fine particles

Other Fibrous Materials:%
None Detected ND

Asbestos Type: %
None Detected ND

Layer 2 of 2 Description: Yellow soft mastic

Non-Fibrous Materials:
Mastic/Binder, Fine particles

Other Fibrous Materials:%
Cellulose 1%

Asbestos Type: %
None Detected ND

Lab ID: 18086261 Client Sample #: JCBY-2-01

Location: JC Boyle Boneyard

Layer 1 of 1 Description: Black brittle asphaltic material with granules

Non-Fibrous Materials:
Asphalt/Binder, Fine particles, Granules

Other Fibrous Materials:%
Cellulose 3%

Asbestos Type: %
None Detected ND

Lab ID: 18086262 Client Sample #: JCBY-2-02

Location: JC Boyle Boneyard

Layer 1 of 1 Description: Black brittle asphaltic material with granules

Non-Fibrous Materials:
Asphalt/Binder, Fine particles, Granules

Other Fibrous Materials:%
Cellulose 4%

Asbestos Type: %
None Detected ND

Lab ID: 18086263 Client Sample #: JCBY-3-01

Location: JC Boyle Boneyard

Layer 1 of 2 Description: Silver paint

Non-Fibrous Materials:
Metallic paint, Fine particles

Other Fibrous Materials:%
Cellulose 1%

Asbestos Type: %
None Detected ND

Sampled by: Client

Analyzed by: Matthew McCallum

Reviewed by: Nick Ly

Date: 08/30/2018

Date: 08/30/2018



Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Boneyard

Batch #: 1816753.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 4

Samples Analyzed: 4

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 2 of 2	Description: Yellow brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Fine particles	Cellulose 2%		None Detected ND

Sampled by: Client

Analyzed by: Matthew McCallum

Reviewed by: Nick Ly

Date: 08/30/2018

Date: 08/30/2018



Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle **NVL Batch Number** **1816753.00**
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Boneyard

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 4

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086260	JCBY-1-01		A
2	18086261	JCBY-2-01		A
3	18086262	JCBY-2-02		A
4	18086263	JCBY-3-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Matthew McCallum		NVL	8/30/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:27 PM

Entered By: Emily Schubert



ASBESTOS CHAIN OF CUSTODY

1816753

Turn Around Time

- | | | |
|----------------------------------|-----------------------------------|-----------------------------------|
| <input type="checkbox"/> 1 Hour | <input type="checkbox"/> 24 Hours | <input type="checkbox"/> 48 Hours |
| <input type="checkbox"/> 2 Hours | <input type="checkbox"/> 2 Days | <input type="checkbox"/> 5 Days |
| <input type="checkbox"/> 4 Hours | <input type="checkbox"/> 3 Days | <input type="checkbox"/> 10 Days |

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company **AECOM**Project Manager **Nicole Gladu**Address **1111 Third Avenue Suite 1600**

Cell () -

Seattle, WA 98101Email **nicole.gladu@aecom.com**Phone **206.438.2700**Fax (**866**) **495 - 5288**Project Name/Number **60537920.2.4a**Project Location **JC Boyle Boneyard**

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> PCM Air (NIOSH 7400) | <input type="checkbox"/> TEM (NIOSH 7402) | <input type="checkbox"/> TEM (AHERA) | <input type="checkbox"/> TEM (EPA Level II Modified) |
| <input checked="" type="checkbox"/> PLM (EPA 600/R-93-116) | <input type="checkbox"/> EPA 400 Points (600/R-93-116) | <input type="checkbox"/> EPA 1000 Points (600/R-93-116) | |
| <input type="checkbox"/> PLM Gravimetry (600/R-93-116) | <input type="checkbox"/> Asbestos in Vermiculite (EPA 600/R-04/004) | <input type="checkbox"/> Asbestos in Sediment (EPA 1900 Points) | |
| <input type="checkbox"/> Asbestos Friable/Non-Friable (EPA 600/R-93/116) | <input type="checkbox"/> Other | | |

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**☐ Call () - ☐ Fax () - ☐ EmailTotal Number of Samples 4

	Sample ID	Description	A/R
1	JCBY-101		
2	2-01		
3	2-02		
4	3-01		
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by			Mullers	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

August 30, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816739.00

Client Project: 60537920.2.4a
Location: JC Boyle Penstock

Dear Ms. Gladu,

Enclosed please find test results for the 1 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Ly".

Nick Ly, Technical Director



Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.

4708 Aurora Ave N, Seattle, WA 98103

p 206.547.0100 | f 206.634.1936

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101**Attention: Ms. Nicole Gladu**

Project Location: JC Boyle Penstock

Batch #: 1816739.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 1

Samples Analyzed: 1

Method: EPA/600/R-93/116
& EPA/600/M4-82-020**Lab ID: 18086117 Client Sample #: JCPS-01-01**

Location: JC Boyle Penstock

Layer 1 of 1 Description: Gray brittle cementitious material

Non-Fibrous Materials:

Cement/Binder, Fine particles, Mineral grains

Other Fibrous Materials: %

Cellulose 1%

Asbestos Type: %**None Detected ND****Sampled by:** Client**Analyzed by:** Matthew McCallum**Reviewed by:** Nick Ly**Date:** 08/30/2018**Date:** 08/30/2018

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1816739.00
TAT 5 Days **AH** No
Rush TAT
Due Date 9/4/2018 **Time** 1:40 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Penstock

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 1

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086117	JCPS-01-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Matthew McCallum		NVL	8/30/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:04 PM

Entered By: Emily Schubert



ASBESTOS CHAIN OF CUSTODY

1816739

Turn Arc

- ☐ 1 Hour ☐ 24 Hours ☐ 4 Days
☐ 2 Hours ☐ 2 Days ☒ 5 Days
☐ 4 Hours ☐ 3 Days ☐ 10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company **AECOM**
Address **1111 Third Avenue Suite 1600**
Seattle, WA 98101
Phone **206.438.2700**

Project Manager **Nicole Gladu**
Cell ()
Email **nicole.gladu@aecom.com**
Fax (**866**) **495 - 5288**

Project Name/Number **60537920.2.4a** Project Location **JC Boyle Penstock**

- ☐ PCM Air (NIOSH 7400) ☐ TEM (NIOSH 7402) ☐ TEM (AHERA) ☐ TEM (EPA Level II Modified)
☒ PLM (EPA 600/R-93-116) ☐ EPA 400 Points (600/R-93-116) ☐ EPA 1000 Points (600/R-93-116)
☐ PLM Gravimetry (600/R-93-116) ☐ Asbestos in Vermiculite (EPA 600/R-04/004) ☐ Asbestos in Sediment (EPA 1900 Points)
☐ Asbestos Friable/Non-Friable (EPA 600/R-93/116) ☐ Other

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**

☐ Call () ☐ Fax () ☐ Email

Total Number of Samples **1**

	Sample ID	Description	A/R
1	JCPS-101		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30 pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	Estimation		NVL Labs	8/27/18	1:50 pm
Analyzed by					
Called by					
Faxed/Email by					

August 31, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816746.00

Client Project: 60537920.2.4a
Location: JC Boyle Powerhouse

Dear Ms. Gladu,

Enclosed please find test results for the 21 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Macfarlane".

Matt Macfarlane, Asbestos Lab Supervisor



Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

Enc.: Sample Results

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Powerhouse

Batch #: 1816746.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 21

Samples Analyzed: 21

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086184 Client Sample #: JCPH-1-01

Layer 1 of 1 Description: Gray brittle material

Non-Fibrous Materials:
Cement/Binder, Mineral grains, Foamed glass

Other Fibrous Materials:%
None Detected ND

Asbestos Type: %
None Detected ND

Lab ID: 18086185 Client Sample #: JCPH-1-02

Location: JC Boyle Powerhouse

Layer 1 of 1 Description: Gray brittle material with paint

Non-Fibrous Materials:
Binder/Filler, Fine grains, Insect parts

Other Fibrous Materials:%
Cellulose 3%

Asbestos Type: %
None Detected ND

Lab ID: 18086186 Client Sample #: JCPH-2-01

Location: JC Boyle Powerhouse

Layer 1 of 1 Description: Off-white crumbly material with debris

Non-Fibrous Materials:
Binder/Filler, Fine particles, Debris
Insect parts

Other Fibrous Materials:%
Cellulose 3%
Spider silk 1%

Asbestos Type: %
None Detected ND

Lab ID: 18086187 Client Sample #: JCPH-2-02

Location: JC Boyle Powerhouse

Layer 1 of 1 Description: Tan crumbly material with paint

Non-Fibrous Materials:
Binder/Filler, Fine particles, Paint

Other Fibrous Materials:%
Cellulose 2%

Asbestos Type: %
None Detected ND

Lab ID: 18086188 Client Sample #: JCPH-3-01

Location: JC Boyle Powerhouse

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Reviewed by: Matt Macfarlane

Date: 08/30/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Powerhouse

Batch #: 1816746.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 21

Samples Analyzed: 21

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 2	Description: Black rubbery material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Vinyl/Binder, Fine particles	None Detected ND		None Detected ND
Layer 2 of 2	Description: Yellow soft mastic			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Mastic/Binder, Fine particles	Cellulose 2%		None Detected ND
		Spider silk 2%		

Lab ID: 18086189 Client Sample #: JCPH-4-01

Location: JC Boyle Powerhouse

Layer 1 of 2	Description: Red rubbery material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Caulking compound, Fine particles, Paint	Cellulose 1%		None Detected ND
Layer 2 of 2	Description: Black sticky mastic			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Mastic/Binder, Miscellaneous particles	Cellulose 4%		None Detected ND

Lab ID: 18086190 Client Sample #: JCPH-6-01

Location: JC Boyle Powerhouse

Layer 1 of 2	Description: White compacted powdery material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Calcareous binder, Fine particles, Paint	None Detected ND		None Detected ND
Layer 2 of 2	Description: White chalky material with paper			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Gypsum/Binder, Fine particles	Cellulose 16%		None Detected ND
		Glass fibers 3%		

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 08/30/2018



Reviewed by: Matt Macfarlane

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Powerhouse

Batch #: 1816746.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 21

Samples Analyzed: 21

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086191 Client Sample #: JCPH-6-02

Location: JC Boyle Powerhouse

Layer 1 of 2 Description: White compacted powdery material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
Calcareous binder, Fine particles, Paint	Cellulose <1%	None Detected ND

Layer 2 of 2 Description: White chalky material with paper

Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
Gypsum/Binder, Fine particles	Cellulose 17%	None Detected ND
	Glass fibers 4%	

Lab ID: 18086192 Client Sample #: JCPH-6-03

Location: JC Boyle Powerhouse

Layer 1 of 2 Description: White compacted powdery material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
Calcareous binder, Fine particles, Paint	Cellulose 2%	None Detected ND
	Spider silk 1%	

Layer 2 of 2 Description: White chalky material with paper

Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
Gypsum/Binder, Fine particles	Cellulose 15%	None Detected ND
	Glass fibers 4%	

Lab ID: 18086193 Client Sample #: JCPH-7-01

Location: JC Boyle Powerhouse

Layer 1 of 1 Description: Off white rubbery material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
Caulking compound, Fine particles, Paint	None Detected ND	None Detected ND

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 08/30/2018



Reviewed by: Matt Macfarlane

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Powerhouse

Batch #: 1816746.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 21

Samples Analyzed: 21

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086194 **Client Sample #: JCPH-8-01**

Location: JC Boyle Powerhouse

Layer 1 of 1 **Description:** Brown sticky material with paint

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: %
Putty Compound, Fine grains, Paint	Cellulose 3%	Chrysotile 3%

Lab ID: 18086195 **Client Sample #: JCPH-8-02**

Location: JC Boyle Powerhouse

Layer 1 of 2 **Description:** White crumbly material with paint

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: %
Binder/Filler, Fine particles, Paint	Cellulose 4%	Chrysotile 6%

Layer 2 of 2 **Description:** Brown sticky material

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: %
Putty Compound, Fine grains	Cellulose 4%	Chrysotile 3%

Lab ID: 18086196 **Client Sample #: JCPH-9-01**

Location: JC Boyle Powerhouse

Layer 1 of 1 **Description:** Off-white brittle material

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: %
Cement/Binder, Mineral grains	Cellulose 2%	None Detected ND

Lab ID: 18086197 **Client Sample #: JCPH-10-01**

Location: JC Boyle Powerhouse

Layer 1 of 1 **Description:** Gray sticky material

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: %
Putty Compound, Fine particles, Debris	Cellulose 3%	None Detected ND

Lab ID: 18086198 **Client Sample #: JCPH-11-01**

Location: JC Boyle Powerhouse

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 08/30/2018

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Powerhouse

Batch #: 1816746.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 21

Samples Analyzed: 21

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 1	Description: Gray rubbery material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Calcareous binder, Fine particles	Cellulose 2%		None Detected ND

Lab ID: 18086199 **Client Sample #: JCPH-12-01**

Location: JC Boyle Powerhouse

Layer 1 of 2	Description: Gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Cement/Binder, Mineral grains	None Detected ND		None Detected ND

Layer 2 of 2	Description: Tan brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Cement/Binder, Mineral grains	Cellulose 1%		None Detected ND

Lab ID: 18086200 **Client Sample #: JCPH-12-02**

Location: JC Boyle Powerhouse

Layer 1 of 1	Description: Gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Cement/Binder, Mineral grains	None Detected ND		None Detected ND

Lab ID: 18086201 **Client Sample #: JCPH-12-03**

Location: JC Boyle Powerhouse

Layer 1 of 2	Description: Gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Cement/Binder, Mineral grains	None Detected ND		None Detected ND

Layer 2 of 2	Description: Tan brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Cement/Binder, Mineral grains, Organic debris	None Detected ND		None Detected ND

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 08/30/2018



Reviewed by: Matt Macfarlane

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Powerhouse

Batch #: 1816746.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 21

Samples Analyzed: 21

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086202 Client Sample #: JCPH-13-01

Location: JC Boyle Powerhouse

Layer 1 of 1 Description: Silver paint

Non-Fibrous Materials:
Paint/Binder, Metal, Miscellaneous particles

Other Fibrous Materials:%
Cellulose 1%

**Asbestos Type: %
None Detected ND**

Lab ID: 18086203 Client Sample #: JCPH-13-02

Location: JC Boyle Powerhouse

Layer 1 of 1 Description: Silver paint

Non-Fibrous Materials:
Paint/Binder, Metal, Miscellaneous particles

Other Fibrous Materials:%
Cellulose <1%

**Asbestos Type: %
None Detected ND**

Lab ID: 18086204 Client Sample #: JCPH-13-03

Location: JC Boyle Powerhouse

Layer 1 of 1 Description: Silver paint

Non-Fibrous Materials:
Paint/Binder, Metal, Miscellaneous particles

Other Fibrous Materials:%
Cellulose 2%

**Asbestos Type: %
None Detected ND**

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Reviewed by: Matt Macfarlane

Date: 08/30/2018

Date: 08/31/2018


Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1816746.00
TAT 5 Days **AH** No
Rush TAT
Due Date 9/4/2018 **Time** 1:40 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Powerhouse

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 21

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086184	JCPH-1-01		A
2	18086185	JCPH-1-02		A
3	18086186	JCPH-2-01		A
4	18086187	JCPH-2-02		A
5	18086188	JCPH-3-01		A
6	18086189	JCPH-4-01		A
7	18086190	JCPH-6-01		A
8	18086191	JCPH-6-02		A
9	18086192	JCPH-6-03		A
10	18086193	JCPH-7-01		A
11	18086194	JCPH-8-01		A
12	18086195	JCPH-8-02		A
13	18086196	JCPH-9-01		A
14	18086197	JCPH-10-01		A
15	18086198	JCPH-11-01		A
16	18086199	JCPH-12-01		A
17	18086200	JCPH-12-02		A
18	18086201	JCPH-12-03		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Daniel		NVL	8/30/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:19 PM

Entered By: Emily Schubert

Company AECOM-Seattle **NVL Batch Number** 1816746.00
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Powerhouse

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 21

Rush Samples

	Lab ID	Sample ID	Description	A/R
19	18086202	JCPH-13-01		A
20	18086203	JCPH-13-02		A
21	18086204	JCPH-13-03		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Daniel		NVL	8/30/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:19 PM

Entered By: Emily Schubert



ASBESTOS CHAIN OF CUSTODY

1816746

Turn Around

- | | | |
|----------------------------------|-----------------------------------|----------------------------------|
| <input type="checkbox"/> 1 Hour | <input type="checkbox"/> 24 Hours | <input type="checkbox"/> 7 Days |
| <input type="checkbox"/> 2 Hours | <input type="checkbox"/> 2 Days | <input type="checkbox"/> 5 Days |
| <input type="checkbox"/> 4 Hours | <input type="checkbox"/> 3 Days | <input type="checkbox"/> 10 Days |

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company **AECOM**
Address **1111 Third Avenue Suite 1600**
Seattle, WA 98101
Phone **206.438.2700**

Project Manager **Nicole Gladu**
Cell () -
Email **nicole.gladu@aecom.com**
Fax (**866**) **495** - **5288**

Project Name/Number 60537920.2.4a	Project Location JC Boyle Powerhouse
--	---

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> PCM Air (NIOSH 7400) | <input type="checkbox"/> TEM (NIOSH 7402) | <input type="checkbox"/> TEM (AHERA) | <input type="checkbox"/> TEM (EPA Level II Modified) |
| <input checked="" type="checkbox"/> PLM (EPA 600/R-93-116) | <input type="checkbox"/> EPA 400 Points (600/R-93-116) | <input type="checkbox"/> EPA 1000 Points (600/R-93-116) | |
| <input type="checkbox"/> PLM Gravimetry (600/R-93-116) | <input type="checkbox"/> Asbestos in Vermiculite (EPA 600/R-04/004) | <input type="checkbox"/> Asbestos in Sediment (EPA 1900 Points) | |
| <input type="checkbox"/> Asbestos Friable/Non-Friable (EPA 600/R-93/116) | <input type="checkbox"/> Other | | |

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**

☐ Call () ☐ Fax () ☐ Email

Total Number of Samples 21

	Sample ID	Description	A/R
1	JCPH - 12-01		
2	12-02		
3	12-03		
4	13-01		
5	13-02		
6	13-03		
7			
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	Shannon Mackay		NVL Labs	8/27/18	1:50pm
Analyzed by					
Called by					
Faxed/Email by					



ASBESTOS CHAIN OF CUSTODY

1816746

Turn Around Time

- ☐ 1 Hour ☐ 2 Days ☐ 5 Days
☐ 2 Hours ☐ 3 Days ☐ 10 Days
☐ 4 Hours

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company **AECOM**
Address **1111 Third Avenue Suite 1600**
Seattle, WA 98101
Phone **206.438.2700**

Project Manager **Nicole Gladu**
Cell
Email **nicole.gladu@aecom.com**
Fax **(866) 495 - 5288**

Project Name/Number **60537920.2.4a** Project Location **JC Boyle**

- ☐ PCM Air (NIOSH 7400) ☐ TEM (NIOSH 7402) ☐ TEM (AHERA) ☐ TEM (EPA Level II Modified)
☐ PLM (EPA 600/R-93-116) ☐ EPA 400 Points (600/R-93-116) ☐ EPA 1000Points (600/R-93-116)
☐ PLM Gravimetry (600/R-93-116) ☐ Asbestos in Vermiculite (EPA 600/R-04/004) ☐ Asbestos in Sediment (EPA 1900 Points)
☐ Asbestos Friable/Non-Friable (EPA 600/R-93/116) ☐ Other

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**

☐ Call ☐ Fax ☐ Email

Total Number of Samples 21

	Sample ID	Description	A/R
1	JCPH-1-01		
2	1-02		
3	2-01		
4	2-02		
5	3-01		
6	4-01		
7	6-01		
8	6-02		
9	6-03		
10	7-01		
11	8-01		
12	8-02		
13	9-01		
14	10-01		
15	11-01		

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by			Nucleus	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

September 4, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816751.00

Client Project: 60537920.2.4a
Location: JC Boyle Pumphouse

Dear Ms. Gladu,

Enclosed please find test results for the 6 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Macfarlane".

Matt Macfarlane, Asbestos Lab Supervisor



Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Pumphouse

Batch #: 1816751.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 6

Samples Analyzed: 6

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086247 Client Sample #: JCPH-1-01

Location: JC Boyle Pumphouse

Layer 1 of 2 Description: Tan paper with asphalt

Non-Fibrous Materials:
Asphalt/Binder, Binder/Filler

Other Fibrous Materials:%
Cellulose 50%

**Asbestos Type: %
None Detected ND**

Layer 2 of 2 Description: Pink fibrous material

Non-Fibrous Materials:
Adhesive/Binder, Binder/Filler, Fine particles

Other Fibrous Materials:%
Glass fibers 69%

**Asbestos Type: %
None Detected ND**

Lab ID: 18086248 Client Sample #: JCPH-1-02

Location: JC Boyle Pumphouse

Layer 1 of 2 Description: Tan paper with asphalt

Non-Fibrous Materials:
Asphalt/Binder, Binder/Filler, Paint

Other Fibrous Materials:%
Cellulose 53%

**Asbestos Type: %
None Detected ND**

Layer 2 of 2 Description: Pink fibrous material

Non-Fibrous Materials:
Adhesive/Binder, Binder/Filler

Other Fibrous Materials:%
Glass fibers 70%

**Asbestos Type: %
None Detected ND**

Lab ID: 18086249 Client Sample #: JCPH-1-03

Location: JC Boyle Pumphouse

Layer 1 of 2 Description: Tan paper with asphalt

Non-Fibrous Materials:
Asphalt/Binder, Binder/Filler, Paint

Other Fibrous Materials:%
Cellulose 49%

**Asbestos Type: %
None Detected ND**

Layer 2 of 2 Description: Pink fibrous material

Non-Fibrous Materials:
Adhesive/Binder, Binder/Filler

Other Fibrous Materials:%
Glass fibers 68%

**Asbestos Type: %
None Detected ND**

Sampled by: Client

Analyzed by: Alla Prysyazhnyuk

Reviewed by: Matt Macfarlane

Date: 09/04/2018

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Pumphouse

Batch #: 1816751.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 6

Samples Analyzed: 6

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086250 Client Sample #: JCPH-2-01

Location: JC Boyle Pumphouse

Layer 1 of 1 Description: Black asphaltic fibrous material

Non-Fibrous Materials:

Asphalt/Binder

Other Fibrous Materials:%

Cellulose 80%

Asbestos Type: %

None Detected ND

Lab ID: 18086251 Client Sample #: JCPH-2-02

Location: JC Boyle Pumphouse

Layer 1 of 1 Description: Black asphaltic fibrous material

Non-Fibrous Materials:

Asphalt/Binder

Other Fibrous Materials:%

Cellulose 78%

Asbestos Type: %

None Detected ND

Lab ID: 18086252 Client Sample #: JCPH-2-03

Location: JC Boyle Pumphouse

Layer 1 of 1 Description: Black asphaltic fibrous material with brown paint

Non-Fibrous Materials:

Asphalt/Binder, Paint

Other Fibrous Materials:%

Cellulose 77%

Asbestos Type: %

None Detected ND

Sampled by: Client

Analyzed by: Alla Prysyazhnyuk

Reviewed by: Matt Macfarlane

Date: 09/04/2018

Date: 09/04/2018


Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1816751.00
TAT 5 Days **AH** No
Rush TAT
Due Date 9/4/2018 **Time** 1:40 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Pumphouse

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 6

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086247	JCPH-1-01		A
2	18086248	JCPH-1-02		A
3	18086249	JCPH-1-03		A
4	18086250	JCPH-2-01		A
5	18086251	JCPH-2-02		A
6	18086252	JCPH-2-03		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Alla Prysyzhnyuk		NVL	9/4/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:24 PM

Entered By: Emily Schubert



Laboratory | Management | Training

ASBESTOS CHAIN OF CUSTODY

1816751

Turn Around

- | | | |
|----------------------------------|-----------------------------------|----------------------------------|
| <input type="checkbox"/> 1 Hour | <input type="checkbox"/> 24 Hours | <input type="checkbox"/> 4 Days |
| <input type="checkbox"/> 2 Hours | <input type="checkbox"/> 2 Days | <input type="checkbox"/> 5 Days |
| <input type="checkbox"/> 4 Hours | <input type="checkbox"/> 3 Days | <input type="checkbox"/> 10 Days |

Please call for TAT less than 24 Hours

Company AECOM
Address 1111 Third Avenue Suite 1600
Seattle, WA 98101
Phone 206.438.2700

Project Manager Nicole Gladu
Cell
Email nicole.gladu@aecom.com
Fax (866) 495 - 5288

Project Name/Number <u>60537920.2.4a</u>	Project Location <u>JC Boyle Pump house</u>
--	---

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> PCM Air (NIOSH 7400) | <input type="checkbox"/> TEM (NIOSH 7402) | <input type="checkbox"/> TEM (AHERA) | <input type="checkbox"/> TEM (EPA Level II Modified) |
| <input checked="" type="checkbox"/> PLM (EPA 600/R-93-116) | <input type="checkbox"/> EPA 400 Points (600/R-93-116) | <input type="checkbox"/> EPA 1000 Points (600/R-93-116) | |
| <input type="checkbox"/> PLM Gravimetry (600/R-93-116) | <input type="checkbox"/> Asbestos in Vermiculite (EPA 600/R-04/004) | <input type="checkbox"/> Asbestos in Sediment (EPA 1900 Points) | |
| <input type="checkbox"/> Asbestos Friable/Non-Friable (EPA 600/R-93/116) | <input type="checkbox"/> Other <u> </u> | | |

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com

☐ Call ☐ Fax ☐ Email

Total Number of Samples 6

	Sample ID	Description	A/R
1	JCPH-1-01		
2	1-02		
3	1-03		
4	2-01		
5	2-02		
6	2-03		
7			
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by			Nulbbs	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

September 4, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816750.00

Client Project: 60537920.2.4a
Location: JC Boyle Residence 1

Dear Ms. Gladu,

Enclosed please find test results for the 29 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Macfarlane".

Matt Macfarlane, Asbestos Lab Supervisor



Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

Enc.: Sample Results

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Residence 1

Batch #: 1816750.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 29

Samples Analyzed: 29

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086215 Client Sample #: JCR1-1-01

Location: JC Boyle Residence 1

Layer 1 of 2 Description: White compacted powdery material with paint

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Calcareous binder, Fine particles, Paint	Cellulose 2%	

Layer 2 of 2 Description: White chalky material with paper

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Gypsum/Binder, Fine particles	Cellulose 18%	

Lab ID: 18086216 Client Sample #: JCR1-1-02

Location: JC Boyle Residence 1

Layer 1 of 2 Description: White compacted powdery material with paint

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Calcareous binder, Fine particles, Paint	Cellulose 1%	

Layer 2 of 2 Description: White chalky material with paper

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Gypsum/Binder, Fine particles	Cellulose 16%	

Lab ID: 18086217 Client Sample #: JCR1-1-03

Location: JC Boyle Residence 1

Layer 1 of 2 Description: White compacted powdery material with paint

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Calcareous binder, Fine particles, Paint	Cellulose 3%	

Layer 2 of 2 Description: White chalky material with paper

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Gypsum/Binder, Fine particles	Cellulose 17%	

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 09/01/2018



Reviewed by: Matt Macfarlane

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Residence 1

Batch #: 1816750.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 29

Samples Analyzed: 29

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086218 Client Sample #: JCR1-1-04

Location: JC Boyle Residence 1

Layer 1 of 2 Description: White compacted powdery material with paint

Non-Fibrous Materials: Other Fibrous Materials: %

Calcareous binder, Fine particles, Paint Cellulose 1%

Asbestos Type: %

None Detected ND

Layer 2 of 2 Description: White chalky material with paper

Non-Fibrous Materials: Other Fibrous Materials: %

Gypsum/Binder, Fine particles Cellulose 15%

Asbestos Type: %

None Detected ND

Lab ID: 18086219 Client Sample #: JCR1-1-05

Location: JC Boyle Residence 1

Layer 1 of 2 Description: White compacted powdery material with paint

Non-Fibrous Materials: Other Fibrous Materials: %

Calcareous binder, Fine particles, Paint Cellulose 3%

Asbestos Type: %

None Detected ND

Layer 2 of 2 Description: White chalky material with paper

Non-Fibrous Materials: Other Fibrous Materials: %

Gypsum/Binder, Fine particles Cellulose 17%

Asbestos Type: %

None Detected ND

Lab ID: 18086220 Client Sample #: JCR1-2-01

Location: JC Boyle Residence 1

Layer 1 of 1 Description: White compacted powdery material with paint

Non-Fibrous Materials: Other Fibrous Materials: %

Calcareous binder, Fine particles, Paint Cellulose 2%

Asbestos Type: %

None Detected ND

Lab ID: 18086221 Client Sample #: JCR1-2-02

Location: JC Boyle Residence 1

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 09/01/2018



Reviewed by: Matt Macfarlane

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Residence 1

Batch #: 1816750.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 29

Samples Analyzed: 29

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 1	Description: White compacted powdery material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %		Asbestos Type: %
	Calcareous binder, Fine particles, Paint	Cellulose 1%		None Detected ND

Lab ID: 18086222 Client Sample #: JCR1-2-03

Location: JC Boyle Residence 1

Layer 1 of 1	Description: White compacted powdery material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %		Asbestos Type: %
	Calcareous binder, Fine particles, Paint	Cellulose 1%		Chrysotile 2%

Lab ID: 18086223 Client Sample #: JCR1-2-04

Location: JC Boyle Residence 1

Layer 1 of 1	Description: White compacted powdery material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %		Asbestos Type: %
	Calcareous binder, Fine particles, Paint	Cellulose 1%		Chrysotile 3%

Lab ID: 18086224 Client Sample #: JCR1-2-05

Location: JC Boyle Residence 1

Layer 1 of 1	Description: White compacted powdery material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %		Asbestos Type: %
	Calcareous binder, Fine particles, Paint	Cellulose 2%		Chrysotile 2%

Lab ID: 18086225 Client Sample #: JCR1-3-01

Location: JC Boyle Residence 1

Layer 1 of 2	Description: White rubbery material with debris			
	Non-Fibrous Materials:	Other Fibrous Materials: %		Asbestos Type: %
	Caulking compound, Miscellaneous particles, Debris	Cellulose 3%		None Detected ND

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Reviewed by: Matt Macfarlane

Date: 09/01/2018

Date: 09/04/2018



 Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Residence 1

Batch #: 1816750.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 29

Samples Analyzed: 29

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 2 of 2	Description: Off-white sheet vinyl			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Vinyl/Binder, Synthetic foam	None Detected ND		None Detected ND

Lab ID: 18086226 Client Sample #: JCR1-4-01

Location: JC Boyle Residence 1

Layer 1 of 3	Description: Black rubbery material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Vinyl/Binder, Fine grains	None Detected ND		None Detected ND

Layer 2 of 3	Description: Yellow firm mastic			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Mastic/Binder, Fine particles	Cellulose 3%		None Detected ND

Layer 3 of 3	Description: White compacted powdery material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Calcareous binder, Fine particles, Paint	Cellulose 1%		None Detected ND

Lab ID: 18086227 Client Sample #: JCR1-4-02

Location: JC Boyle Residence 1

Layer 1 of 2	Description: Black rubbery material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Vinyl/Binder, Fine grains	None Detected ND		None Detected ND

Layer 2 of 2	Description: Yellow firm mastic with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Mastic/Binder, Fine particles	Cellulose 2%		None Detected ND

Lab ID: 18086228 Client Sample #: JCR1-5-01

Location: JC Boyle Residence 1

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 09/01/2018



Reviewed by: Matt Macfarlane

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Residence 1

Batch #: 1816750.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 29

Samples Analyzed: 29

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 2	Description: Tan sheet vinyl	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
		Vinyl/Binder, Synthetic foam	Glass fibers 8%	None Detected ND
Layer 2 of 2	Description: Yellow sticky mastic	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
		Mastic/Binder, Miscellaneous particles	Cellulose 3%	None Detected ND
			Hair 1%	

Lab ID: 18086229 Client Sample #: JCR1-5-02

Location: JC Boyle Residence 1

Layer 1 of 2	Description: Tan sheet vinyl	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
		Vinyl/Binder, Synthetic foam	Glass fibers 8%	None Detected ND
Layer 2 of 2	Description: Yellow sticky mastic	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
		Mastic/Binder, Miscellaneous particles	Cellulose 5%	None Detected ND

Lab ID: 18086230 Client Sample #: JCR1-6-01

Location: JC Boyle Residence 1

Layer 1 of 1	Description: Gray crumbly material	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
		Binder/Filler, Fine grains	Cellulose 2%	None Detected ND

Lab ID: 18086231 Client Sample #: JCR1-7-01


Location: JC Boyle Residence 1

Layer 1 of 2	Description: Off-white crumbly material	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
		Binder/Filler, Fine grains	Cellulose 1%	None Detected ND

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 09/01/2018



Reviewed by: Matt Macfarlane

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Residence 1

Batch #: 1816750.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 29

Samples Analyzed: 29

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 2 of 2	Description: Black sticky material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Fine grains	Cellulose 2%		None Detected ND

Lab ID: 18086232 **Client Sample #: JCR1-8-01**

Location: JC Boyle Residence 1

Layer 1 of 1	Description: Black fibrous material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Miscellaneous particles	Cellulose 94%		None Detected ND

Lab ID: 18086233 **Client Sample #: JCR1-9-01**

Location: JC Boyle Residence 1

Layer 1 of 5	Description: Tan sheet vinyl			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Vinyl/Binder, Synthetic foam	Glass fibers 7%		None Detected ND

Layer 2 of 5	Description: Clear sticky adhesive			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Adhesive/Binder, Miscellaneous particles	Cellulose 4%		None Detected ND

Layer 3 of 5	Description: Gray crumbly material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Fine grains	Cellulose 3%		None Detected ND

Layer 4 of 5	Description: Off-white sheet vinyl			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Vinyl/Binder, Synthetic foam	None Detected ND		None Detected ND

Layer 5 of 5	Description: Gray fibrous material with hard yellow mastic			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Mastic/Binder, Fine particles	Cellulose 63%		None Detected ND

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 09/01/2018



Reviewed by: Matt Macfarlane

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Residence 1

Batch #: 1816750.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 29

Samples Analyzed: 29

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Glass fibers 9%

Lab ID: 18086234 Client Sample #: JCR1-10-01

Location: JC Boyle Residence 1

Layer 1 of 1 Description: Gray crumbly material

Non-Fibrous Materials:
Binder/Filler, Fine grains

Other Fibrous Materials:%
Cellulose 5%

**Asbestos Type: %
None Detected ND**

Lab ID: 18086235 Client Sample #: JCR1-11-01

Location: JC Boyle Residence 1

Layer 1 of 2 Description: White compacted powdery material with paint

Non-Fibrous Materials:
Calcareous binder, Fine particles, Paint

Other Fibrous Materials:%
Cellulose 2%

**Asbestos Type: %
None Detected ND**

Layer 2 of 2 Description: White chalky material with paper

Non-Fibrous Materials:
Gypsum/Binder, Fine particles

Other Fibrous Materials:%
Cellulose 17%
Glass fibers 4%

**Asbestos Type: %
None Detected ND**

Lab ID: 18086236 Client Sample #: JCR1-11-02

Location: JC Boyle Residence 1

Layer 1 of 2 Description: White compacted powdery material with paint

Non-Fibrous Materials:
Calcareous binder, Fine particles, Paint

Other Fibrous Materials:%
Cellulose 1%

**Asbestos Type: %
None Detected ND**

Layer 2 of 2 Description: White chalky material with paper

Non-Fibrous Materials:
Gypsum/Binder, Fine particles

Other Fibrous Materials:%
Cellulose 16%
Glass fibers 4%

**Asbestos Type: %
None Detected ND**

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Reviewed by: Matt Macfarlane

Date: 09/01/2018

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Residence 1

Batch #: 1816750.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 29

Samples Analyzed: 29

Method: EPA/600/R-93/116
& EPA/600/M4-82-020**Lab ID: 18086237 Client Sample #: JCR1-11-03**

Location: JC Boyle Residence 1

Layer 1 of 3 Description: White compacted powdery material with paint

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Calcareous binder, Fine particles, Paint

Cellulose 2%

None Detected ND**Layer 2 of 3 Description:** White compacted powdery material with paper

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Calcareous binder, Fine particles

Cellulose 27%

None Detected ND**Layer 3 of 3 Description:** White chalky material with paper

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Gypsum/Binder, Fine particles

Cellulose 18%

None Detected ND

Glass fibers 3%

Lab ID: 18086238 Client Sample #: JCR1-12-01

Location: JC Boyle Residence 1

Layer 1 of 1 Description: Black fibrous material

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Asphalt/Binder, Miscellaneous particles

Cellulose 95%

None Detected ND**Lab ID: 18086239 Client Sample #: JCR1-12-02**

Location: JC Boyle Residence 1

Layer 1 of 1 Description: Black fibrous material

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Asphalt/Binder, Miscellaneous particles

Cellulose 93%

None Detected ND**Lab ID: 18086240 Client Sample #: JCR1-13-01**

Location: JC Boyle Residence 1

Sampled by: Client**Analyzed by:** Daniel Charbonneaux**Date:** 09/01/2018

Reviewed by: Matt Macfarlane**Date:** 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Residence 1

Batch #: 1816750.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 29

Samples Analyzed: 29

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 2	Description: Black sticky material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Fine grains	Cellulose 6%		None Detected ND
Layer 2 of 2	Description: Gray brittle material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Cement/Binder, Mineral grains, Paint	None Detected ND		None Detected ND

Lab ID: 18086241 Client Sample #: JCR1-13-02

Location: JC Boyle Residence 1

Layer 1 of 1	Description: Black sticky material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Fine grains	Cellulose 2%		None Detected ND

Lab ID: 18086242 Client Sample #: JCR1-14-01

Location: JC Boyle Residence 1

Layer 1 of 1	Description: Off-white sandy brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Calcareous binder, Fine particles, Sand	Cellulose 2%		None Detected ND

Lab ID: 18086243 Client Sample #: JCR1-14-02

Location: JC Boyle Residence 1

Layer 1 of 1	Description: Off-white sandy brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Calcareous binder, Fine particles, Sand	Cellulose 1%		None Detected ND

Sampled by: Client

Analyzed by: Daniel Charbonneaux

Date: 09/01/2018



Reviewed by: Matt Macfarlane

Date: 09/04/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1816750.00
TAT 5 Days **AH** No
Rush TAT
Due Date 9/4/2018 **Time** 1:40 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Residence 1

Subcategory PLM Bulk

Item Code ASB-02 **EPA 600/R-93-116 Asbestos by PLM <bulk>**

Total Number of Samples 29

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086215	JCR1-1-01		A
2	18086216	JCR1-1-02		A
3	18086217	JCR1-1-03		A
4	18086218	JCR1-1-04		A
5	18086219	JCR1-1-05		A
6	18086220	JCR1-2-01		A
7	18086221	JCR1-2-02		A
8	18086222	JCR1-2-03		A
9	18086223	JCR1-2-04		A
10	18086224	JCR1-2-05		A
11	18086225	JCR1-3-01		A
12	18086226	JCR1-4-01		A
13	18086227	JCR1-4-02		A
14	18086228	JCR1-5-01		A
15	18086229	JCR1-5-02		A
16	18086230	JCR1-6-01		A
17	18086231	JCR1-7-01		A
18	18086232	JCR1-8-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Daniel		NVL	9/1/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:22 PM

Entered By: Fatima Khan

Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1816750.00
TAT 5 Days **AH** No
Rush TAT
Due Date 9/4/2018 **Time** 1:40 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Residence 1

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 29

Rush Samples

	Lab ID	Sample ID	Description	A/R
19	18086233	JCR1-9-01		A
20	18086234	JCR1-10-01		A
21	18086235	JCR1-11-01		A
22	18086236	JCR1-11-02		A
23	18086237	JCR1-11-03		A
24	18086238	JCR1-12-01		A
25	18086239	JCR1-12-02		A
26	18086240	JCR1-13-01		A
27	18086241	JCR1-13-02		A
28	18086242	JCR1-14-01		A
29	18086243	JCR1-14-02		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Daniel		NVL	9/1/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:22 PM

Entered By: Fatima Khan



Laboratory | Management | Training

ASBESTOS CHAIN OF CUSTODY

1816750

Turn Around Time

- ☐ 1 Hour ☐ 2 Hours ☐ 2 Days ☐ 5 Days
☐ 4 Hours ☐ 3 Days ☐ 10 Days

Please call for TAT less than 24 Hours

Company AECOM

Project Manager Nicole Gladu

Address 1111 Third Avenue Suite 1600
Seattle, WA 98101

Cell
Email nicole.gladu@aecom.com

Phone 206.438.2700

Fax (866) 495 - 5288

Project Name/Number 60537920.2.4a

Project Location JC Boyle

Residence 1

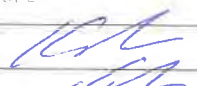
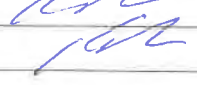
- ☐ PCM Air (NIOSH 7400) ☐ TEM (NIOSH 7402) ☐ TEM (AHERA) ☐ TEM (EPA Level II Modified)
☒ PLM (EPA 600/R-93-116) ☐ EPA 400 Points (600/R-93-116) ☐ EPA 1000 Points (600/R-93-116)
☐ PLM Gravimetry (600/R-93-116) ☐ Asbestos in Vermiculite (EPA 600/R-04/00-4) ☐ Asbestos in Sediment (EPA 1900 Points)
☐ Asbestos Friable/Non-Friable (EPA 600/R-93/116) ☐ Other

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com

☐ Call ☐ Fax ☐ Email

Total Number of Samples 29

	Sample ID	Description	A/R
1	JCR1-1-01		
2	1-02		
3	1-03		
4	1-04		
5	1-05		
6	2-01		
7	2-02		
8	2-03		
9	2-04		
10	2-05		
11	3-01		
12	4-01		
13	4-02		
14	5-01		
15	5-02		

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by			<u>Nicole Gladu</u>	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					



1816750

ASBESTOS CHAIN OF CUSTODY

Turn Around

☐ 1 Hour

☐ 2 Hours

☐ 4 Hours

☐ 2 Days

☐ 3 Days

☐ 5 Days

☐ 10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM

Project Manager Nicole Gladu

Address 1111 Third Avenue Suite 1600
Seattle, WA 98101

Cell () () ()
Email nicole.gladu@aecom.com

Phone 206.438.2700

Fax (866) 495 - 5288

Project Name/Number 60537920.2.4a

Project Location JC Boyle Residence 1

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> PCM Air (NIOSH 7400) | <input type="checkbox"/> TEM (NIOSH 7402) | <input type="checkbox"/> TEM (AHERA) | <input type="checkbox"/> TEM (EPA Level II Modified) |
| <input checked="" type="checkbox"/> PLM (EPA 600/R-93-116) | <input type="checkbox"/> EPA 400 Points (600/R-93-116) | <input type="checkbox"/> EPA 1000 Points (600/R-93-116) | |
| <input type="checkbox"/> PLM Gravimetry (600/R-93-116) | <input type="checkbox"/> Asbestos in Vermiculite (EPA 600/R-04/004) | <input type="checkbox"/> Asbestos in Sediment (EPA 1900 Points) | |
| <input type="checkbox"/> Asbestos Friable/Non-Friable (EPA 600/R-93/116) | <input type="checkbox"/> Other _____ | | |

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com

☐ Call () () () ☐ Fax () () () ☐ Email _____

Total Number of Samples 29

Sample ID	Description	A/R
1	JC1-6-21	
2	7-01	
3	8-01	
4	9-01	
5	10-01	
6	11-01	
7	11-02	
8	11-03	
9	12-01	
10	12-02	
11	13-01	
12	13-02	
13	14-01	
14	14-02	
15		

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by				8/27/18	1:30pm
Analyzed by					
Called by					
Faxed/Email by					

August 31, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816743.00

Client Project: 60537920.2.4a
Location: JC Boyle Residence 2

Dear Ms. Gladu,

Enclosed please find test results for the 7 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Macfarlane".

Matt Macfarlane, Asbestos Lab Supervisor



Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Residence 2

Batch #: 1816743.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 7

Samples Analyzed: 7

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086158 Client Sample #: JCR2-1-01

Location: JC Boyle Residence 2

Layer 1 of 2 Description: Black asphaltic fibrous material with granules

Non-Fibrous Materials:	Other Fibrous Materials:%
Asphalt/Binder, Granules	Glass fibers 31%

Asbestos Type: %
None Detected ND

Layer 2 of 2 Description: Black asphaltic fibrous felt

Non-Fibrous Materials:	Other Fibrous Materials:%
Asphalt/Binder	Cellulose 67%

Asbestos Type: %
None Detected ND

Lab ID: 18086159 Client Sample #: JCR2-1-02

Location: JC Boyle Residence 2

Layer 1 of 2 Description: Black asphaltic fibrous material with granules

Non-Fibrous Materials:	Other Fibrous Materials:%
Asphalt/Binder, Granules	Glass fibers 29%

Asbestos Type: %
None Detected ND

Layer 2 of 2 Description: Black asphaltic fibrous felt

Non-Fibrous Materials:	Other Fibrous Materials:%
Asphalt/Binder	Cellulose 64%

Asbestos Type: %
None Detected ND

Lab ID: 18086160 Client Sample #: JCR2-2-01

Location: JC Boyle Residence 2

Layer 1 of 1 Description: White fibrous material

Non-Fibrous Materials:	Other Fibrous Materials:%
Binder/Filler	Polyethylene fibers 85%

Asbestos Type: %
None Detected ND

Lab ID: 18086161 Client Sample #: JCR2-2-02

Location: JC Boyle Residence 2

Sampled by: Client

Analyzed by: Lauren Wetzel

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Residence 2

Batch #: 1816743.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 7

Samples Analyzed: 7

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 1	Description: White fibrous material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler	Polyethylene fibers 88%		None Detected ND

Lab ID: 18086162 **Client Sample #: JCR2-3-01**

Location: JC Boyle Residence 2

Layer 1 of 1	Description: Black brittle asphaltic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder	None Detected ND		None Detected ND

Lab ID: 18086163 **Client Sample #: JCR2-4-01**

Location: JC Boyle Residence 2

Layer 1 of 1	Description: Black soft asphaltic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder	None Detected ND		None Detected ND

Lab ID: 18086164 **Client Sample #: JCR2-4-02**

Location: JC Boyle Residence 2

Layer 1 of 1	Description: Black soft asphaltic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder	None Detected ND		None Detected ND

Sampled by: Client

Analyzed by: Lauren Wetzel

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle **NVL Batch Number** **1816743.00**
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Residence 2

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 7

Rush Samples _____

	Lab ID	Sample ID	Description	A/R
1	18086158	JCR2-1-01		A
2	18086159	JCR2-1-02		A
3	18086160	JCR2-2-01		A
4	18086161	JCR2-2-02		A
5	18086162	JCR2-3-01		A
6	18086163	JCR2-4-01		A
7	18086164	JCR2-4-02		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Lauren Wetzel		NVL	8/31/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions: _____

Date: 8/27/2018

Time: 4:14 PM

Entered By: Fatima Khan



1816743

ASBESTOS CHAIN OF CUSTODY

Turn Around Time

- ☐ 1 Hour ☐ 24 Hours ☐ 1 Days
☐ 2 Hours ☐ 2 Days ☒ 5 Days
☐ 4 Hours ☐ 5 Days ☐ 10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company **AECOM**Project Manager **Nicole Gladu**Address **1111 Third Avenue Suite 1600**

Cell () -

Seattle, WA 98101Email **nicole.gladu@aecom.com**Phone **206.438.2700**

Fax (866) 495 - 5288

Project Name/Number	60537920.2.4a	Project Location	JC Boyle Residence 2
---------------------	----------------------	------------------	-----------------------------

- ☐ PCM Air (NIOSH 7400) ☐ TEM (NIOSH 7402) ☐ TEM (AHERA) ☐ TEM (EPA Level II Modified)
☒ PLM (EPA 600/R-93-116) ☐ EPA 400 Points (600/R-93-116) ☐ EPA 1000 Points (600/R-93-116)
☐ PLM Gravimetry (600/R-93-116) ☐ Asbestos in Vermiculite (EPA 600/R-04/004) ☐ Asbestos in Sediment (EPA 1900 Points)
☐ Asbestos Friable/Non-Friable (EPA 600/R-93/116) ☐ Other

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**☐ Call () -☐ Fax () -☐ Email

Total Number of Samples

7

	Sample ID	Description	A/R
1	JC22-101		
2	102		
3	201		
4	202		
5	301		
6	401		
7	402		
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by			AECOM	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

August 30, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816748.00

Client Project: 60537920.2.4a
Location: JC Boyle Spillway House

Dear Ms. Gladu,

Enclosed please find test results for the 3 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Ly".

Nick Ly, Technical Director



Lab Code: 102063-0

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Spillway House

Batch #: 1816748.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 3

Samples Analyzed: 3

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086244 Client Sample #: JCSW-1-01

Layer 1 of 1 Description: Gray brittle cementitious material

Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
Cement/Binder, Fine particles, Mineral grains	Cellulose 1%	None Detected ND

Lab ID: 18086245 Client Sample #: JCSW-2-01

Location: JC Boyle Spillway House

Layer 1 of 1 Description: Black brittle asphaltic material

Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
Asphalt/Binder, Fine particles	Cellulose 2%	None Detected ND

Lab ID: 18086246 Client Sample #: JCSW-2-02

Location: JC Boyle Spillway House

Layer 1 of 1 Description: Black brittle asphaltic material

Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
Asphalt/Binder, Fine particles	Cellulose 1%	None Detected ND

Sampled by: Client

Analyzed by: Matthew McCallum

Reviewed by: Nick Ly

Date: 08/30/2018

Date: 08/30/2018



Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle **NVL Batch Number** 1816748.00
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Spillway House

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 3

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086244	JCSW-1-01		A
2	18086245	JCSW-2-01		A
3	18086246	JCSW-2-02		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Matthew McCallum		NVL	8/30/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:21 PM

Entered By: Emily Schubert



Laboratory | Management | Training

ASBESTOS CHAIN OF CUSTODY

1816748

Turn Around

☐ 1 Hour

☐ 24 Hours

☐ 1 Days

☐ 2 Hours

☐ 2 Days

☒ 5 Days

☐ 4 Hours

☐ 3 Days

☐ 10 Days

Please call for TAT less than 24 Hours

Company AECOM

Project Manager Nicole Gladu

Address 1111 Third Avenue Suite 1600

Cell 1

Seattle, WA 98101

Email nicole.gladu@aecom.com

Phone 206.438.2700

Fax (866) 495 - 5288

Project Name/Number 60537920.2.4a

Project Location

JC Boyle Spillway House

☐ PCM Air (NIOSH 7400)

☐ TEM (NIOSH 7402)

☐ TEM (AHERA)

☐ TEM (EPA Level II Modified)

☒ PLM (EPA 600/R-93-116)

☐ EPA 400 Points (600/R-93-116)

☐ EPA 1000 Points (600/R-93-116)

☐ PLM Gravimetry (600/R-93-116)

☐ Asbestos in Vermiculite (EPA 600/R-04/004)

☐ Asbestos in Sediment (EPA 1900 Points)

☐ Asbestos Friable/Non-Friable (EPA 600/R-93/116)

☐ Other

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com

☐ Call

☐ Fax

☐ Email

Total Number of Samples 3

Sample ID	Description	A/R
1 <u>JCSW - 1-01</u>		
2 <u>1 2-01</u>		
3 <u>1 2-02</u>		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by				8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

August 30, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816757.00

Client Project: 60537920.2.4a
Location: JC Boyle Woodbridge

Dear Ms. Gladu,

Enclosed please find test results for the 2 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Ly".

Nick Ly, Technical Director



Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Woodbridge

Batch #: 1816757.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 2

Samples Analyzed: 2

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086271 Client Sample #: JCWB-1-01

Location: JC Boyle Woodbridge

Layer 1 of 1 Description: Brittle orange material

Non-Fibrous Materials:
Binder/Filler, Fine particles

Other Fibrous Materials:%
Cellulose 2%

Asbestos Type: %
None Detected ND

Lab ID: 18086272 Client Sample #: JCWB-1-02

Location: JC Boyle Woodbridge

Layer 1 of 2 Description: Brittle orange material

Non-Fibrous Materials:
Binder/Filler, Fine particles

Other Fibrous Materials:%
Cellulose 1%

Asbestos Type: %
None Detected ND

Layer 2 of 2 Description: Brown woody material

Non-Fibrous Materials:
Organic debris, Wood flakes

Other Fibrous Materials:%
Wood fibers 87%

Asbestos Type: %
None Detected ND

Sampled by: Client

Analyzed by: Matthew McCallum

Reviewed by: Nick Ly

Date: 08/30/2018

Date: 08/30/2018



Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle **NVL Batch Number** 1816757.00
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Woodbridge

Subcategory PLM Bulk

Item Code ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

Total Number of Samples 2

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086271	JCWB-1-01		A
2	18086272	JCWB-1-02		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Matthew McCallum		NVL	8/30/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:37 PM

Entered By: Fatima Khan



Laboratory | Management | Training

ASBESTOS CHAIN OF CUSTODY

1816757

per Aerosol Tube

✓ J18 Flow

✓ J18 Filtration

✓ J18 Filtration

✓ J18 Flow

✓ J18 Filtration

✓ J18 Flow

✓ J18 Filtration

Regulated for TAT, Section 101, 102, 103

Company **AECOM**

Project Manager **Nicole Gladu**

Address **1111 Third Avenue Suite 1600**

Seattle, WA 98101

Phone **206.438.2700**

Email **nicole.gladu@aecom.com**

Cell **866 495 5288**

Project Name/ID/Scope **60537920.2.4a**

Project Location **JC Boyle**

Woodbridge

- | | | | |
|---|--|--|-------------------------------|
| ✓ PCM Air (NIOSH 1400) | ✓ TEM (NIOSH 7402) | ✓ TEM (AHERA) | ✓ TEM (EPA Level II Modified) |
| ✓ PLM (EPA 600/R-93-116) | ✓ EPA 400 Points (600/R-93-116) | ✓ EPA 1000 Points (600/R-93-116) | |
| ✓ PLM Gravimetry (600/R-93-116) | ✓ Asbestos in Vermiculite (EPA 600/R-04/004) | ✓ Asbestos in Sediment (EPA 1900 Points) | |
| ✓ Asbestos Friable/Non-Friable (EPA 600/R-93-116) | ✓ Other | | |

Reddressing Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**

✓ J18 Flow

✓ J18 Filtration

✓ J18 Filtration

Total Number of Samples

2

Sample ID	Description	A/R
1	JCWB-1-01	
2	JCWB-1-02	
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Direct Supply	Signature	Company	Date	Time
Sampled by: Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by: Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

Received by	Signature	Company	Date	Time
Analyzed by:		NVL	8/27/18	12:30
Called by:				
Faxed/Email by:				

August 31, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816745.00

Client Project: 60537920.2.4a
Location: JC Boyle Vehicle Storage

Dear Ms. Gladu,

Enclosed please find test results for the 12 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Macfarlane".

Matt Macfarlane, Asbestos Lab Supervisor



Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Vehicle Storage

Batch #: 1816745.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 12

Samples Analyzed: 12

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086165 **Client Sample #: JCVS-1-01**

Location: JC Boyle Vehicle Storage

Layer 1 of 1 **Description:** Yellow fibrous material with mastic and vinyl surface

Non-Fibrous Materials:	Other Fibrous Materials: %
Binder/Filler, Vinyl/Binder, Mastic/Binder	Glass fibers 72%
Insect parts	Cellulose 3%

Asbestos Type: %
None Detected ND

Lab ID: 18086166 **Client Sample #: JCVS-1-02**

Location: JC Boyle Vehicle Storage

Layer 1 of 1 **Description:** Yellow fibrous material with mastic and vinyl surface

Non-Fibrous Materials:	Other Fibrous Materials: %
Binder/Filler, Mastic/Binder, Vinyl/Binder	Glass fibers 78%

Asbestos Type: %
None Detected ND

Lab ID: 18086167 **Client Sample #: JCVS-1-03**

Location: JC Boyle Vehicle Storage

Layer 1 of 1 **Description:** Yellow fibrous material with mastic and vinyl surface

Non-Fibrous Materials:	Other Fibrous Materials: %
Binder/Filler, Mastic/Binder, Vinyl/Binder	Glass fibers 65%
Insect parts	

Asbestos Type: %
None Detected ND

Lab ID: 18086168 **Client Sample #: JCVS-2-01**

Location: JC Boyle Vehicle Storage

Layer 1 of 3 **Description:** Gray crumbly material

Non-Fibrous Materials:	Other Fibrous Materials: %
Fine particles	None Detected ND

Asbestos Type: %
None Detected ND

Sampled by: Client

Analyzed by: Welly Hsieh

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Vehicle Storage

Batch #: 1816745.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 12

Samples Analyzed: 12

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 2 of 3	Description: Gray soft elastic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Caulking compound	None Detected ND		None Detected ND
Layer 3 of 3	Description: Dark gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Mineral grains, Fine particles	None Detected ND		None Detected ND

Lab ID: 18086169 Client Sample #: JCVS-2-02

Location: JC Boyle Vehicle Storage

Layer 1 of 3	Description: Gray soft elastic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Caulking compound	None Detected ND		None Detected ND
Layer 2 of 3	Description: Gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Mineral grains, Fine particles	None Detected ND		None Detected ND
Layer 3 of 3	Description: Brown brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Mineral/Binder	None Detected ND		None Detected ND

Lab ID: 18086170 Client Sample #: JCVS-3-01

Location: JC Boyle Vehicle Storage

Layer 1 of 1	Description: White soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Caulking compound, Fine particles, Insect parts	Spider silk 2%		None Detected ND

Lab ID: 18086171 Client Sample #: JCVS-4-01

Location: JC Boyle Vehicle Storage

Sampled by: Client

Analyzed by: Welly Hsieh

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Vehicle Storage

Batch #: 1816745.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 12

Samples Analyzed: 12

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 1	Description: Black asphaltic fibrous felt			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Binder/Filler	Cellulose 64%		None Detected ND

Lab ID: 18086172 **Client Sample #: JCVS-4-02**

Location: JC Boyle Vehicle Storage

Layer 1 of 1	Description: Black asphaltic fibrous felt			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Binder/Filler	Cellulose 67%		None Detected ND

Lab ID: 18086173 **Client Sample #: JCVS-5-01**

Location: JC Boyle Vehicle Storage

Layer 1 of 1	Description: Black asphaltic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Fine particles	Cellulose <1%		None Detected ND

Lab ID: 18086174 **Client Sample #: JCVS-5-02**

Location: JC Boyle Vehicle Storage

Layer 1 of 1	Description: Black asphaltic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Fine particles	None Detected ND		None Detected ND

Lab ID: 18086175 **Client Sample #: JCVS-6-01**

Location: JC Boyle Vehicle Storage

Layer 1 of 1	Description: Black asphaltic soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Mineral grains	None Detected ND		None Detected ND

Lab ID: 18086176 **Client Sample #: JCVS-6-02**

Location: JC Boyle Vehicle Storage

Sampled by: Client**Analyzed by:** Welly Hsieh**Date:** 08/31/2018

Reviewed by: Matt Macfarlane**Date:** 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Vehicle Storage

Batch #: 1816745.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 12

Samples Analyzed: 12

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 1 of 1	Description: Black asphaltic soft material			
	Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: %	
	Asphalt/Binder, Fine particles, Wood flakes	Cellulose <1%	None Detected ND	

Sampled by: Client

Analyzed by: Welly Hsieh

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018


Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1816745.00
TAT 5 Days **AH** No
Rush TAT
Due Date 9/4/2018 **Time** 1:40 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Vehicle Storage

Subcategory PLM Bulk

Item Code ASB-02 **EPA 600/R-93-116 Asbestos by PLM <bulk>**

Total Number of Samples 12

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086165	JCVS-1-01		A
2	18086166	JCVS-1-02		A
3	18086167	JCVS-1-03		A
4	18086168	JCVS-2-01		A
5	18086169	JCVS-2-02		A
6	18086170	JCVS-3-01		A
7	18086171	JCVS-4-01		A
8	18086172	JCVS-4-02		A
9	18086173	JCVS-5-01		A
10	18086174	JCVS-5-02		A
11	18086175	JCVS-6-01		A
12	18086176	JCVS-6-02		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Welly Hsieh		NVL	8/31/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:17 PM

Entered By: Fatima Khan



ASBESTOS CHAIN OF CUSTODY

1816745

Turn A

☐ 1☐ 2 Hours☐ 2 Days☒ 5 Days☐ 4 Hours☐ 3 Days☐ 10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOMProject Manager Nicole GladuAddress 1111 Third Avenue Suite 1600

Cell () - -

Seattle, WA 98101Email nicole.gladu@aecom.comPhone 206.438.2700

Fax (866) 495-5288

Project Name/Number <u>60537920.2.4a</u>	Project Location <u>JC Boyle Vehicle Storage</u>
--	--

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> PCM Air (NIOSH 7400) | <input type="checkbox"/> TEM (NIOSH 7402) | <input type="checkbox"/> TEM (AHERA) | <input type="checkbox"/> TEM (EPA Level II Modified) |
| <input checked="" type="checkbox"/> PLM (EPA 600/R-93-116) | <input type="checkbox"/> EPA 400 Points (600/R-93-116) | <input type="checkbox"/> EPA 1000 Points (600/R-93-116) | |
| <input type="checkbox"/> PLM Gravimetry (600/R-93-116) | <input type="checkbox"/> Asbestos in Vermiculite (EPA 600/R-04/004) | <input type="checkbox"/> Asbestos in Sediment (EPA 1900 Points) | |
| <input type="checkbox"/> Asbestos Friable/Non-Friable (EPA 600/R-93/116) | <input type="checkbox"/> Other | | |

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com☐ Call () - - ☐ Fax () - - ☐ EmailTotal Number of Samples 12

Sample ID	Description	A/R
1	JCVS-1-01	
2	1-02	
3	1-03	
4	2-01	
5	2-02	
6	3-01	
7	4-01	
8	4-02	
9	5-01	
10	5-02	
11	6-01	
12	6-02	
13		
14		
15		

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	Shannon Mackay		NVL Labs	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

August 31, 2018

Nicole Gladu
AECOM-Seattle
1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 1816758.00

Client Project: 60537920.2.4a
Location: JC Boyle Warehouse

Dear Ms. Gladu,

Enclosed please find test results for the 12 sample(s) submitted to our laboratory for analysis on 8/27/2018.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Macfarlane".

Matt Macfarlane, Asbestos Lab Supervisor



Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Warehouse

Batch #: 1816758.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 12

Samples Analyzed: 12

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086273 Client Sample #: JCWH-1-01

Location: JC Boyle Warehouse

Layer 1 of 1 Description: Black asphaltic material with gray surface

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % Chrysotile 10%
Asphalt/Binder, Fine particles	Spider silk 2%	

Lab ID: 18086274 Client Sample #: JCWH-1-02

Location: JC Boyle Warehouse

Layer 1 of 1 Description: Black asphaltic material with gray surface

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % Chrysotile 14%
Asphalt/Binder, Fine particles	None Detected ND	

Lab ID: 18086275 Client Sample #: JCWH-2-01

Location: JC Boyle Warehouse

Layer 1 of 2 Description: Black asphaltic mastic with mesh and paper

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Asphalt/Binder, Binder/Filler, Mastic/Binder	Glass fibers 10%	
	Cellulose 36%	

Layer 2 of 2 Description: Yellow fibrous material

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Binder/Filler	Glass fibers 91%	

Lab ID: 18086276 Client Sample #: JCWH-2-02

Location: JC Boyle Warehouse

Layer 1 of 2 Description: Black asphaltic mastic with mesh and paper

Non-Fibrous Materials:	Other Fibrous Materials: %	Asbestos Type: % None Detected ND
Asphalt/Binder, Binder/Filler, Mastic/Binder	Glass fibers 12%	

Sampled by: Client

Analyzed by: Welly Hsieh

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Warehouse

Batch #: 1816758.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 12

Samples Analyzed: 12

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Cellulose 30%

Layer 2 of 2

Description: Yellow fibrous material

Non-Fibrous Materials:

Other Fibrous Materials:%

Asbestos Type: %

Binder/Filler

Glass fibers 95%

None Detected ND

Lab ID: 18086277

Client Sample #: JCWH-2-03

Location: JC Boyle Warehouse

Layer 1 of 2

Description: Black asphaltic mastic with mesh and paper

Non-Fibrous Materials:

Other Fibrous Materials:%

Asbestos Type: %

Asphalt/Binder, Mastic/Binder, Binder/Filler

Glass fibers 15%

None Detected ND

Cellulose 32%

Layer 2 of 2

Description: Yellow fibrous material

Non-Fibrous Materials:

Other Fibrous Materials:%

Asbestos Type: %

Binder/Filler

Glass fibers 90%

None Detected ND

Lab ID: 18086278

Client Sample #: JCWH-3-01

Location: JC Boyle Warehouse

Layer 1 of 1

Description: Black asphaltic material

Non-Fibrous Materials:

Other Fibrous Materials:%

Asbestos Type: %

Asphalt/Binder, Fine particles, Mineral grains

Cellulose 5%

None Detected ND

Wood flakes

Lab ID: 18086279

Client Sample #: JCWH-3-02

Location: JC Boyle Warehouse

Layer 1 of 1

Description: Black asphaltic material

Non-Fibrous Materials:

Other Fibrous Materials:%

Asbestos Type: %

Asphalt/Binder, Fine particles, Insect parts

Cellulose 7%

None Detected ND

Sampled by: Client

Analyzed by: Welly Hsieh

Date: 08/31/2018



Reviewed by: Matt Macfarlane

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Warehouse

Batch #: 1816758.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 12

Samples Analyzed: 12

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Spider silk 2%

Lab ID: 18086280 Client Sample #: JCWH-4-01

Location: JC Boyle Warehouse

Layer 1 of 1 Description: Gray brittle material

Non-Fibrous Materials:
Mineral grains

Other Fibrous Materials:%
None Detected ND

Asbestos Type: %
None Detected ND

Lab ID: 18086281 Client Sample #: JCWH-5-01

Location: JC Boyle Warehouse

Layer 1 of 1 Description: Off-white putty material

Non-Fibrous Materials:
Putty Compound, Calcareous particles

Other Fibrous Materials:%
None Detected ND

Asbestos Type: %
Chrysotile 4%

Lab ID: 18086282 Client Sample #: JCWH-6-01

Location: JC Boyle Warehouse

Layer 1 of 1 Description: Tan fibrous material with paper

Non-Fibrous Materials:
Binder/Filler, Fine particles

Other Fibrous Materials:%
Glass fibers 56%
Cellulose 30%

Asbestos Type: %
None Detected ND

Lab ID: 18086283 Client Sample #: JCWH-6-02

Location: JC Boyle Warehouse

Layer 1 of 1 Description: Tan fibrous material with paper

Non-Fibrous Materials:
Binder/Filler, Fine particles, Insect parts

Other Fibrous Materials:%
Glass fibers 60%
Cellulose 28%

Asbestos Type: %
None Detected ND

Sampled by: Client

Analyzed by: Welly Hsieh

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018

Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Warehouse

Batch #: 1816758.00

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 12

Samples Analyzed: 12

Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 18086284 Client Sample #: JCWH-6-03

Location: JC Boyle Warehouse

Layer 1 of 3 Description: White fibrous material

Non-Fibrous Materials:
Binder/Filler

Other Fibrous Materials:%
Cellulose 42%
Synthetic fibers 30%

**Asbestos Type: %
None Detected ND**

Layer 2 of 3 Description: Tan fibrous material

Non-Fibrous Materials:
Binder/Filler

Other Fibrous Materials:%
Cellulose 89%

**Asbestos Type: %
None Detected ND**

Layer 3 of 3 Description: Black asphaltic material

Non-Fibrous Materials:
Asphalt/Binder

Other Fibrous Materials:%
Cellulose 5%

**Asbestos Type: %
None Detected ND**

Sampled by: Client

Analyzed by: Welly Hsieh

Reviewed by: Matt Macfarlane

Date: 08/31/2018

Date: 08/31/2018


Matt Macfarlane, Asbestos Lab Supervisor

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1816758.00
TAT 5 Days **AH** No
Rush TAT
Due Date 9/4/2018 **Time** 1:40 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Warehouse

Subcategory PLM Bulk

Item Code ASB-02 **EPA 600/R-93-116 Asbestos by PLM <bulk>**

Total Number of Samples 12

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086273	JCWH-1-01		A
2	18086274	JCWH-1-02		A
3	18086275	JCWH-2-01		A
4	18086276	JCWH-2-02		A
5	18086277	JCWH-2-03		A
6	18086278	JCWH-3-01		A
7	18086279	JCWH-3-02		A
8	18086280	JCWH-4-01		A
9	18086281	JCWH-5-01		A
10	18086282	JCWH-6-01		A
11	18086283	JCWH-6-02		A
12	18086284	JCWH-6-03		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Welly Hsieh		NVL	8/31/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:39 PM

Entered By: Fatima Khan



Laboratory | Management | Training

ASBESTOS CHAIN OF CUSTODY

1816758

Turn Around Time

- | | | |
|----------------------------------|-----------------------------------|----------------------------------|
| <input type="checkbox"/> 1 Hour | <input type="checkbox"/> 24 Hours | <input type="checkbox"/> 4 Days |
| <input type="checkbox"/> 2 Hours | <input type="checkbox"/> 2 Days | <input type="checkbox"/> 5 Days |
| <input type="checkbox"/> 4 Hours | <input type="checkbox"/> 3 Days | <input type="checkbox"/> 10 Days |

Please call for TAT less than 24 Hours

Company AECOM

Project Manager Nicole Gladu

Address 1111 Third Avenue Suite 1600

Cell () -

Seattle, WA 98101

Email nicole.gladu@aecom.com

Phone 206.438.2700

Fax (866) 495 - 5288

Project Name/Number 60537920.2.4a

Project Location JC Boyle Warehouse

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> PCM Air (NIOSH 7400) | <input type="checkbox"/> TEM (NIOSH 7402) | <input type="checkbox"/> TEM (AHERA) | <input type="checkbox"/> TEM (EPA Level II Modified) |
| <input checked="" type="checkbox"/> PLM (EPA 600/R-93-116) | <input type="checkbox"/> EPA 400 Points (600/R-93-116) | <input type="checkbox"/> EPA 1000 Points (600/R-93-116) | |
| <input type="checkbox"/> PLM Gravimetry (600/R-93-116) | <input type="checkbox"/> Asbestos in Vermiculite (EPA 600/R-04/004) | <input type="checkbox"/> Asbestos in Sediment (EPA 1900 Points) | |
| <input type="checkbox"/> Asbestos Friable/Non-Friable (EPA 600/R-93/116) | <input type="checkbox"/> Other _____ | | |

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com

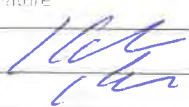

☐ Call () -

☐ Fax () -

☐ Email _____

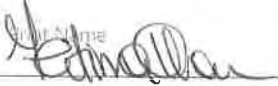




Total Number of Samples 12

	Sample ID	Description	A/R
1	JCWH-1-01		
2	1-02		
3	2-01		
4	2-02		
5	2-03		
6	3-01		
7	3-02		
8	4-01		
9	5-01		
10	6-01		
11	6-02		
12	6-03		
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

Received by
Analyzed by
Called by
Faxed/Email by

August 29, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816778.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Metals/Organics Labs Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle
Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu
Project Location: JC Boyle Canal Headgate

Batch #: 1816778.00

Matrix: Paint
Method: EPA 3051/7000B
Client Project #: 60537920.2.4a
Date Received: 8/27/2018
Samples Received: 1
Samples Analyzed: 1

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086364	JCCH-Pb1-01	0.2090	48	350000	35

Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/29/2018

Date Issued: 08/29/2018

Shalini Patel, Metals/Organics Labs

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Company AECOM-Seattle **NVL Batch Number** 1816778.00
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Canal Headgate

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 1

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086364	JCCH-Pb1-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/29/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 5:32 PM

Entered By: Soumeiya Benzina

METALS CHAIN OF CUSTODY

Turn Around Time

☐ 2 Hour

☐ 4

☐ 2 Days

☐ 3 Days

☐ 4 Days

☒ 5 Days

☐ 6-10 Days

Please call for TAT less than 24 Hours

1816778

Company **AECOM**
Address **1111 Third Avenue Suite 1600**
Seattle, WA 98101
Phone **206.438.2700**

Project Manager **Nicole Gladu**
Cell
Email **nicole.gladu@aecom.com**
Fax

Project Name/Number **60537920.2.4a** Project Location **JC Boyle Canal Headgate**

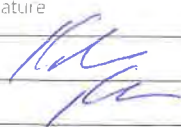
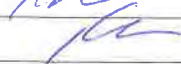
<input type="checkbox"/> Total Metals	<input checked="" type="checkbox"/> TAA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Paint Chips (f)	<input type="checkbox"/> Soil	RCRA 8	RCRA 11
<input type="checkbox"/> TCLP	<input type="checkbox"/> HCB (ppm)	<input type="checkbox"/> Paint Chips (m)	<input type="checkbox"/> Dust Wipes		<input type="checkbox"/> Barium	<input type="checkbox"/> Chromium
	<input type="checkbox"/> GPAA (ppm)	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Waste Water		<input type="checkbox"/> Arsenic	<input type="checkbox"/> Mercury
	<input type="checkbox"/> CAAA (ppm)	<input type="checkbox"/> Other			<input checked="" type="checkbox"/> Lead	<input type="checkbox"/> Silver
					<input type="checkbox"/> Selenium	<input type="checkbox"/> Cadmium
						<input type="checkbox"/> Copper
						<input type="checkbox"/> Zinc
						<input type="checkbox"/> Other

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com


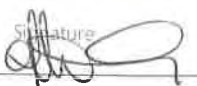
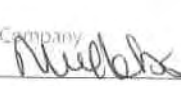
☐ Call ☐ Fax ☐ Email

Total Number of Samples **1**

Sample ID	Description	A/R
1	JCH-Ph1-01	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by				8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

August 29, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816774.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Metals/Organics Labs Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle
Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Batch #: 1816774.00

Matrix: Paint
Method: EPA 3051/7000B
Client Project #: 60537920.2.4a
Date Received: 8/27/2018
Samples Received: 3
Samples Analyzed: 3

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Communications Building

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086354	JCCB-Pb1-01	0.2264	44	< 44	<0.0044
18086355	JCCB-Pb2-01	0.1424	70	140	0.014
18086356	JCCB-Pb3-01	0.0510	200	< 200	<0.020


Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/29/2018

Date Issued: 08/29/2018


Shalini Patel, Metals/Organics Labs

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Company AECOM-Seattle **NVL Batch Number** 1816774.00
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Communications Building

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 3

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086354	JCCB-Pb1-01		A
2	18086355	JCCB-Pb2-01		A
3	18086356	JCCB-Pb3-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/29/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 5:22 PM

Entered By: Soumeiya Benzina

1816774

NVLINDUSTRIAL HYGIENE SERVICES
LABORATORY • MANAGEMENT • TRAINING**METALS
CHAIN OF CUSTODY**

Turn Around Time

☐ 2 Hour☐ 2 Days☒ 5 Days☐☐ 3 Days☐ 6-10 Days☐ 4 Days

Please call for TAT less than 24 Hours

Company **AECOM**

Address **1111 Third Avenue Suite 1600**

Seattle, WA 98101

Phone **206.438.2700**

Project Manager **Nicole Gladu**

Cell () -

Email **nicole.gladu@aecom.com**

Fax () -

Project Name/Number **60537920.2.4a** Project Location **JC Boyle** *Communications Bld Building*

<input type="checkbox"/> Total Metals	<input checked="" type="checkbox"/> TFAA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Paint Chips (Pb)	<input type="checkbox"/> Soil	RCRA 8	RCRA 11
<input type="checkbox"/> TCLP	<input type="checkbox"/> PCB (ppm)	<input type="checkbox"/> Paint Chips (Cu)	<input type="checkbox"/> Dust Wipes		<input type="checkbox"/> Barium	<input type="checkbox"/> Cobalt
	<input type="checkbox"/> GFAA (ppm)	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Waste Water		<input type="checkbox"/> Arsenic	<input type="checkbox"/> Mercury
	<input type="checkbox"/> CVAA (ppm)	<input type="checkbox"/> Other:			<input checked="" type="checkbox"/> Lead	<input type="checkbox"/> Zinc
					<input type="checkbox"/> Selenium	<input type="checkbox"/> Cadmium
						<input type="checkbox"/> Other:

Reporting Instructions Please email: **kimberly.riche@aecom.com** & **shannon.mackay@aecom.com**

☐ Call () ☐ Fax () ☐ Email

Total Number of Samples **3**

	Sample ID	Description	A/R
1	JCB- P51-01		
2	1 P52-01		
3	1 P53-01		
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche	<i>[Signature]</i>	AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche	<i>[Signature]</i>	AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

August 29, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816773.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Metals/Organics Labs Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle
Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Batch #: 1816773.00

Matrix: Paint
Method: EPA 3051/7000B
Client Project #: 60537920.2.4a
Date Received: 8/27/2018
Samples Received: 3
Samples Analyzed: 3

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Fire Protection & Electrical Transform

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086351	JCFP-Pb1-01	0.2067	48	56	0.0056
18086352	JCFP-Pb2-01	0.2034	49	< 49	<0.0049
18086353	JCFP-Pb3-01	0.1591	63	< 63	<0.0063


Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/29/2018

Date Issued: 08/29/2018


Shalini Patel, Metals/Organics Labs

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Company AECOM-Seattle **NVL Batch Number** 1816773.00
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Fire Protection & Electrical Transform

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 3

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086351	JCFP-Pb1-01		A
2	18086352	JCFP-Pb2-01		A
3	18086353	JCFP-Pb3-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/29/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 5:18 PM

Entered By: Soumeiya Benzina

METALS CHAIN OF CUSTODY

Turn Around Time

- ☐ 2 Hour ☐ 4
☐ 2 Days ☐ 3 Days ☐ 4 Days
☒ 5 Days ☐ 6-10 Days

Please call for TAT less than 24 Hours

1816773

Company **AECOM**
Address **1111 Third Avenue Suite 1600**
Seattle, WA 98101
Phone **206.438.2700**

Project Manager **Nicole Gladu**
Cell ()
Email **nicole.gladu@aecom.com**
Fax ()

Project Name/Number **60537920.2.4a** Project Location **JC Boyle** *Fire Protection ? Electrical*

<input checked="" type="checkbox"/> Total Metals	<input checked="" type="checkbox"/> GFAA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Paint Chips (Pb)	<input type="checkbox"/> Soil	RCRA 8	RCRA 11
<input type="checkbox"/> TELP	<input type="checkbox"/> ICP/PEM	<input type="checkbox"/> Paint Chips (Cd)	<input type="checkbox"/> Dust Wipes		<input type="checkbox"/> Barium	<input type="checkbox"/> Chromium
	<input type="checkbox"/> GFAA (ppb)	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Waste Water		<input type="checkbox"/> Arsenic	<input type="checkbox"/> Mercury
	<input type="checkbox"/> GFAA (ppb)	<input type="checkbox"/> Other			<input checked="" type="checkbox"/> Lead	<input type="checkbox"/> Cadmium
					<input type="checkbox"/> Selenium	<input type="checkbox"/> Cobalt
						<input type="checkbox"/> Zinc
						<input type="checkbox"/> Other

Transform

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**

☐ Call ()
☐ Fax ()
☐ Email ()

Total Number of Samples **3**

Sample ID	Description	A/R
1	JLCP- Pb1-01	
2	JLCP- Pb2-01	
3	JLCP- Pb3-01	
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Print Name	Signature	Company	Date	Time
Sampled by Kim Riche	<i>[Signature]</i>	AECOM	8/20/18-8/23/18	11:00am
Relinquish by Kim Riche	<i>[Signature]</i>	AECOM	8/27/18	1:30pm

Office Use Only

Print Name	Signature	Company	Date	Time
Received by <i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	8/27/18	1:40pm
Analyzed by				
Called by				
Faxed/Email by				

August 29, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600

Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816787.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Metals/Organics Labs Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle
Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu
Project Location: JC Boyle Gated Control Center

Batch #: 1816787.00

Matrix: Paint
Method: EPA 3051/7000B
Client Project #: 60537920.2.4a
Date Received: 8/27/2018
Samples Received: 1
Samples Analyzed: 1

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086405	JCCG-Pb1-01	0.1883	53	3300	0.33

Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/29/2018

Date Issued: 08/29/2018

Shalini Patel, Metals/Organics Labs

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Company AECOM-Seattle **NVL Batch Number** **1816787.00**
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Gated Control Center

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 1

Rush Samples _____

	Lab ID	Sample ID	Description	A/R
1	18086405	JCCG-Pb1-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				
Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Emily Schubert		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/29/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special RCVD amanded COC via email 8/28 at 8:00

Instructions: _____

Date: 8/28/2018

Time: 9:12 AM

Entered By: Emily Schubert

1816787



METALS CHAIN OF CUSTODY

Turn Around Time

- ☒ 2 Hour ☐ 4 Hours ☐ 24 Hours
☒ 2 Days ☐ 3 Days ☐ 4 Days
☒ 5 Days ☐ 6-10 Days
 Please call for TAT less than 24 Hours

Company AECOM
 Address 1111 Third Avenue Suite 1600
Seattle, WA 98101
 Phone 206.438.2700

Project Manager Nicole Gladu
 Cell () -
 Email nicole.gladu@aecom.com
 Fax () -

Project Name/Number 60537920.2.4a Project Location JC Boyle Gated Control Center

<input type="checkbox"/> Total Metals	<input checked="" type="checkbox"/> FAA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Paint Chips (%)	<input type="checkbox"/> Soil	RCRA 8	RCRA 11
<input type="checkbox"/> TCLP	<input type="checkbox"/> ICP (PPM)	<input type="checkbox"/> Paint Chips (cm)	<input type="checkbox"/> Dust Wipes		<input type="checkbox"/> Barium	<input type="checkbox"/> Chromium
	<input type="checkbox"/> GFAA (ppb)	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Waste Water		<input type="checkbox"/> Arsenic	<input type="checkbox"/> Mercury
	<input type="checkbox"/> CVAA (ppb)	<input type="checkbox"/> Other			<input checked="" type="checkbox"/> Lead	<input type="checkbox"/> Zinc
					<input type="checkbox"/> Selenium	<input type="checkbox"/> Cadmium
						<input type="checkbox"/> Other

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com

☐ Call () - ☐ Fax () - ☐ Email

Total Number of Samples 1

	Sample ID	Description	A/R
1	JCCG - Pbl-01		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	Emileis		NVL	8/27/18	1:40
Analyzed by					
Called by					
Faxed/Email by					

August 29, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816776.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Metals/Organics Labs Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Hazmat Shed

Batch #: 1816776.00

Matrix: Paint

Method: EPA 3051/7000B

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 5

Samples Analyzed: 5

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086358	JCHM-Pb1-01	0.1766	57	65	0.0065
18086359	JCHM-Pb2-01	0.1911	52	290000	29
18086360	JCHM-Pb3-01	0.1702	59	< 59	<0.0059
18086361	JCHM-Pb4-01	0.1476	68	220000	22
18086362	JCHM-Pb5-01	0.2090	48	560	0.056

Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/29/2018

Date Issued: 08/29/2018


Shalini Patel, Metals/Organics Labs

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Company AECOM-Seattle **NVL Batch Number** **1816776.00**
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Hazmat Shed

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 5

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086358	JCHM-Pb1-01		A
2	18086359	JCHM-Pb2-01		A
3	18086360	JCHM-Pb3-01		A
4	18086361	JCHM-Pb4-01		A
5	18086362	JCHM-Pb5-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/29/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special
Instructions:

Date: 8/27/2018

Time: 5:28 PM

Entered By: Soumeiya Benzina

METALS CHAIN OF CUSTODY

Turn Around Time

☐ 2 Hour

☐ 4

☐ 2 Days

☐ 5 Days

☐ 4 Days

☒ 5 Days

☐ 6-10 Days

Please call for TAT less than 24 Hours

1816776

Company **AECOM**

Project Manager **Nicole Gladu**

Address **1111 Third Avenue Suite 1600**

Cell () -

Seattle, WA 98101

Email **nicole.gladu@aecom.com**

Phone **206.438.2700**

Fax () -

Project Name/Number **60537920.2.4a**

Project Location **JC Boyle**

Hazmat Shed

☐ Total Metals

☒ LEAA (ppm)

☐ Air Filter

☐ Paint Chips (P-)

☐ Soil

RCRA 8

RCRA 11

☐ TCLP

☐ ICP (PPM)

☐ Phase Change (ppm)

☐ Dust Wipes

☐ Barium

☐ Chromium

☐ Silver

☐ Cobalt

☐ GEAA (ppm)

☐ Drinking Water

☐ Waste Water

☐ Arsenic

☐ Mercury

☒ Lead

☐ Zinc

☐ CVAA (ppm)

☐ Other

☐ Selenium

☐ Cadmium

☐ Other

Reporting Instructions

Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com

☐ Call () -

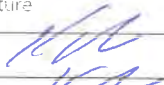

☐ Fax () -

☐ Email

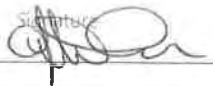
Total Number of Samples

5

Sample ID	Description	A/R
1	JCHM-PB1-01	
2	PB2-01	
3	PB3-01	
4	PB4-01	
5	PB5-01	
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Print Name	Signature	Company	Date	Time
Sampled by Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

Print Name	Signature	Company	Date	Time
Received by Shannon Mackay		Newbbs	8/27/18	1:40pm
Analyzed by				
Called by				
Faxed/Email by				

August 29, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816766.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Metals/Organics Labs Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle

 Address: 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Intake Structure/ Fish ladder

Batch #: 1816766.00

Matrix: Paint

Method: EPA 3051/7000B

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 11

Samples Analyzed: 11

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086314	JCIS-Pb1-01	0.1125	89	< 89	<0.0089
18086315	JCIS-Pb2-01	0.2085	48	740	0.074
18086316	JCIS-Pb3-01	0.0811	120	< 120	<0.012
18086317	JCIS-Pb4-01	0.1945	51	12000	1.2
18086318	JCIS-Pb5-01	0.2015	50	68	0.0068
18086319	JCIS-Pb6-01	0.2023	49	57000	5.7
18086320	JCIS-Pb7-01	0.0556	180	< 180	<0.018
18086321	JCIS-Pb8-01	0.1945	51	< 51	<0.0051
18086322	JCIS-Pb9-01	0.1238	81	74000	7.4
18086323	JCIS-Pb10-01	0.2052	49	19000	1.9
18086324	JCIS-Pb11-01	0.0708	140	490	0.049


Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/29/2018

Date Issued: 08/29/2018


 Shalini Patel, Metals/Organics Labs

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Bench Run No: 2018-0829-7

Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1816766.00
TAT 5 Days **AH** No
Rush TAT
Due Date 9/4/2018 **Time** 1:40 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Intake Structure/ Fish ladder

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 11

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086314	JCIS-Pb1-01		A
2	18086315	JCIS-Pb2-01		A
3	18086316	JCIS-Pb3-01		A
4	18086317	JCIS-Pb4-01		A
5	18086318	JCIS-Pb5-01		A
6	18086319	JCIS-Pb6-01		A
7	18086320	JCIS-Pb7-01		A
8	18086321	JCIS-Pb8-01		A
9	18086322	JCIS-Pb9-01		A
10	18086323	JCIS-Pb10-01		A
11	18086324	JCIS-Pb11-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/29/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:54 PM

Entered By: Emily Schubert

METALS CHAIN OF CUSTODY

Turn Around Time

☐ 2 Hour

☐ 2 Days

☒ 3 Days

Please call for TAT less than 24 Hours

☐ 3 Days

☐ 6-10 Days

☐ 4 Days

1816766

Company **AECOM**
Address **1111 Third Avenue Suite 1600**
Seattle, WA 98101
Phone **206.438.2700**

Project Manager **Nicole Gladu**
Cell ()
Email **nicole.gladu@aecom.com**
Fax ()

Project Name/Number **60537920.2.4a** Project Location **JC Boyle Intake structure | Fish ladder**

<input type="checkbox"/> Total Metals	<input checked="" type="checkbox"/> PAA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Paint Chips (%)	<input type="checkbox"/> Soil	RCRA 8	RCRA 11
<input type="checkbox"/> TCLP	<input type="checkbox"/> IEP (PPM)	<input type="checkbox"/> Paint Chips (cm)	<input type="checkbox"/> Dust Wipes		<input type="checkbox"/> Barium	<input type="checkbox"/> Chromium
	<input type="checkbox"/> GFAA (ppm)	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Waste Water		<input type="checkbox"/> Arsenic	<input type="checkbox"/> Mercury
	<input type="checkbox"/> CVAA (ppb)	<input type="checkbox"/> Other			<input type="checkbox"/> Selenium	<input type="checkbox"/> Cadmium
					<input checked="" type="checkbox"/> Lead	<input type="checkbox"/> Silver
						<input type="checkbox"/> Copper
						<input type="checkbox"/> Zinc
						<input type="checkbox"/> Other

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com


☐ Call () ☐ Fax () ☐ Email

Total Number of Samples **11**

	Sample ID	Description	A/R
1	JCIS- Pb1-01		
2	Pb2-01		
3	Pb3-01		
4	Pb4-01		
5	Pb5-01		
6	Pb6-01		
7	Pb7-01		
8	Pb8-01		
9	Pb9-01		
10	Pb10-01		
11	Pb11-01		
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	Kim Riche		AECOM	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

August 29, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816761.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Metals/Organics Labs Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Office Warehouse

Batch #: 1816761.00

Matrix: Paint

Method: EPA 3051/7000B

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 7

Samples Analyzed: 7

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086301	JCOW-Pb1-01	0.2176	46	< 46	<0.0046
18086302	JCOW-Pb2-01	0.1685	59	< 59	<0.0059
18086303	JCOW-Pb3-01	0.1682	59	< 59	<0.0059
18086304	JCOW-Pb4-01	0.1825	55	< 55	<0.0055
18086305	JCOW-Pb5-01	0.1777	56	< 56	<0.0056
18086306	JCOW-Pb6-01	0.1930	52	< 52	<0.0052
18086307	JCOW-Pb7-01	0.1045	96	< 96	<0.0096


Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/29/2018

Date Issued: 08/29/2018


 Shalini Patel, Metals/Organics Labs

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Company AECOM-Seattle **NVL Batch Number** 1816761.00
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Office Warehouse

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 7

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086301	JCOW-Pb1-01		A
2	18086302	JCOW-Pb2-01		A
3	18086303	JCOW-Pb3-01		A
4	18086304	JCOW-Pb4-01		A
5	18086305	JCOW-Pb5-01		A
6	18086306	JCOW-Pb6-01		A
7	18086307	JCOW-Pb7-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/29/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:43 PM

Entered By: Fatima Khan

METALS CHAIN OF CUSTODY

Turn Around Time
☐ 2 Hour
☐ 2 Days
☒ 5 Days
 Please call for

1816761

Company AECOM
 Address 1111 Third Avenue Suite 1600
Seattle, WA 98101
 Phone 206.438.2700

Project Manager Nicole Gladu
 Cell ()
 Email nicole.gladu@aecom.com
 Fax ()

Project Name/Number 60537920.2.4a

Project Location JC Boyle

OFFICE WAREHOUSE



<input type="checkbox"/> Total Metals	<input checked="" type="checkbox"/> AsA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Paint Chips (air)	<input type="checkbox"/> Soil	RCRA 8	RCRA 11
<input type="checkbox"/> TCLP	<input type="checkbox"/> PCB (ppm)	<input type="checkbox"/> Paint Chips (soil)	<input type="checkbox"/> Dust/Wides		<input type="checkbox"/> Barium	<input type="checkbox"/> Chromium
	<input type="checkbox"/> GFAA (ppb)	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Waste Water		<input type="checkbox"/> Arsenic	<input type="checkbox"/> Mercury
	<input type="checkbox"/> CMAA (ppb)	<input type="checkbox"/> Other			<input type="checkbox"/> Selenium	<input checked="" type="checkbox"/> Lead
					<input type="checkbox"/> Cadmium	<input type="checkbox"/> Copper
						<input type="checkbox"/> Zinc
						<input type="checkbox"/> Other

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com



☐ Call () ☐ Fax () ☐ Email

Total Number of Samples 7

	Sample ID	Description	A/R
1	JCOW-Pb1-01		
2	Pb2-01		
3	Pb3-01		
4	Pb4-01		
5	Pb5-01		
6	Pb6-01		
7	Pb7-01		
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

Received by		Signature	Company	Date	Time
Analyzed by			Newlabs	8/27/18	1:40pm
Called by					
Faxed/Email by					

August 29, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816775.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Metals/Organics Labs Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle
Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu
Project Location: JC Boyle Boneyard

Batch #: 1816775.00

Matrix: Paint
Method: EPA 3051/7000B
Client Project #: 60537920.2.4a
Date Received: 8/27/2018
Samples Received: 1
Samples Analyzed: 1

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086357	JCBY-Pb1-01	0.1430	70	15000	1.5

Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/29/2018

Date Issued: 08/29/2018

Shalini Patel, Metals/Organics Labs

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Company AECOM-Seattle **NVL Batch Number** 1816775.00
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Boneyard

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 1

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086357	JCBY-Pb1-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/29/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 5:26 PM

Entered By: Soumeiya Benzina

METALS CHAIN OF CUSTODY

Turn Around Time
☐ 2 Hour ☐ 4
☐ 2 Days ☐ 3 Days ☐ 4 Days
☒ 5 Days ☐ 6-10 Days
 Please call for TAT less than 24 Hours

1816775

Company **AECOM**
 Address **1111 Third Avenue Suite 1600**
Seattle, WA 98101
 Phone **206.438.2700**

Project Manager **Nicole Gladu**
 Cell () -
 Email **nicole.gladu@aecom.com**
 Fax () -

Project Name/Number **60537920.2.4a** Project Location **JC Boyle Boneyard**



<input type="checkbox"/> Total Metals	<input checked="" type="checkbox"/> AA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Paint Chips (Ps)	<input type="checkbox"/> Soil	RCRA 8	RCRA 11
<input type="checkbox"/> TCLP	<input type="checkbox"/> ICP (PPM)	<input type="checkbox"/> Paint Chips (cm)	<input type="checkbox"/> Dust Wipes		<input type="checkbox"/> Barium	<input type="checkbox"/> Chromium
	<input type="checkbox"/> GFAA (ppm)	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Waste Water		<input type="checkbox"/> Arsenic	<input type="checkbox"/> Mercury
	<input type="checkbox"/> GFAA (ppm)	<input type="checkbox"/> Other			<input type="checkbox"/> Selenium	<input type="checkbox"/> Cadmium
					<input checked="" type="checkbox"/> Lead	<input type="checkbox"/> Cobalt
						<input type="checkbox"/> Zinc
						<input type="checkbox"/> Other

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**

☐ Call () - ☐ Fax () - ☐ Email

Total Number of Samples **1**

	Sample ID	Description	A/R
1	JCBY - Pb1-01		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Print Name	Signature	Company	Date	Time
Sampled by Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by Kim Riche		AECOM	8/27/18	1:30 pm

Office Use Only

Print Name	Signature	Company	Date	Time
Received by Kim Riche		NVlabs	8/27/18	1:40 pm
Analyzed by				
Called by				
Faxed/Email by				

August 29, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816763.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Metals/Organics Labs Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle
Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu
Project Location: JC Boyle Pen Stock

Batch #: 1816763.00

Matrix: Paint
Method: EPA 3051/7000B
Client Project #: 60537920.2.4a
Date Received: 8/27/2018
Samples Received: 1
Samples Analyzed: 1

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086310	JCPS-Pb1-01	0.1390	72	97000	9.7

Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/29/2018

Date Issued: 08/29/2018

Shalini Patel, Metals/Organics Labs

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Company AECOM-Seattle **NVL Batch Number** **1816763.00**
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Pen Stock

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 1

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086310	JCPS-Pb1-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/29/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:49 PM

Entered By: Emily Schubert

1816763



METALS
CHAIN OF CUSTODY

☐ 2 Days ☐ 3 Days ☐ 4 Hours
☒ 5 Days ☐ 6-10 Days ☐ 4 Days
Please call for TAT less than 24 Hours

Company AECOM Project Manager Nicole Gladu
Address 1111 Third Avenue Suite 1600 Cell ()
Seattle, WA 98101 Email nicole.gladu@aecom.com
Phone 206.438.2700 Fax ()

Project Name/Number 60537920.2.4a Project Location JC Boyle Pen stock

<input checked="" type="checkbox"/> Total Metals	<input checked="" type="checkbox"/> As (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Paint Chips (Fe)	<input type="checkbox"/> Soil	RCRA 8	RCRA 11		
<input type="checkbox"/> TCLP	<input type="checkbox"/> ICP (PPM)	<input type="checkbox"/> Paint Chips (cm)	<input type="checkbox"/> Dust Wipes		<input type="checkbox"/> Barium	<input type="checkbox"/> Chromium	<input type="checkbox"/> Silver	<input type="checkbox"/> Copper
	<input type="checkbox"/> GFAA (ppb)	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Waste Water		<input type="checkbox"/> Arsenic	<input type="checkbox"/> Mercury	<input checked="" type="checkbox"/> Lead	<input type="checkbox"/> Zinc
	<input type="checkbox"/> CVAA (ppb)	<input type="checkbox"/> Other			<input type="checkbox"/> Selenium	<input type="checkbox"/> Cadmium		<input type="checkbox"/> Other

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com
☐ Call () ☐ Fax () ☐ Email ()

Total Number of Samples 1

	Sample ID	Description	A/R
1	JCPS-PB1-01		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	Kim Riche		Mullebs	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

August 29, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816767.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Metals/Organics Labs Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Powerhouse

Batch #: 1816767.00

Matrix: Paint

Method: EPA 3051/7000B

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 7

Samples Analyzed: 7

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086325	JCPH-Pb1-01	0.1983	50	680	0.068
18086326	JCPH-Pb2-01	0.1803	55	180	0.018
18086327	JCPH-Pb3-01	0.1446	69	360	0.036
18086328	JCPH-Pb4-01	0.1550	65	100000	10
18086329	JCPH-Pb5-01	0.1472	68	< 68	<0.0068
18086330	JCPH-Pb6-01	0.0704	140	< 140	<0.014
18086331	JCPH-Pb7-01	0.2099	48	21000	2.1


Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/29/2018

Date Issued: 08/29/2018


Shalini Patel, Metals/Organics Labs

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Company AECOM-Seattle **NVL Batch Number** **1816767.00**
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Powerhouse

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 7

Rush Samples _____

	Lab ID	Sample ID	Description	A/R
1	18086325	JCPH-Pb1-01		A
2	18086326	JCPH-Pb2-01		A
3	18086327	JCPH-Pb3-01		A
4	18086328	JCPH-Pb4-01		A
5	18086329	JCPH-Pb5-01		A
6	18086330	JCPH-Pb6-01		A
7	18086331	JCPH-Pb7-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/29/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions: _____

Date: 8/27/2018

Time: 4:56 PM

Entered By: Emily Schubert

METALS CHAIN OF CUSTODY

1816767

Turn Around

☐ 2 Hours

☐ 4 Hours

☐ 24 Hours

☐ 2 Days

☐ 3 Days

☐ 4 Days

☒ 5 Days

☐ 6-10 Days

Please call for TAT less than 24 Hours

Company AECOM
Address 1111 Third Avenue Suite 1600
Seattle, WA 98101
Phone 206.438.2700

Project Manager Nicole Gladu
Cell ()
Email nicole.gladu@aecom.com
Fax ()

Project Name/Number 60537920.2.4a Project Location JC Boyle Power house

<input type="checkbox"/> Total Metals	<input checked="" type="checkbox"/> AAA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Paint Chips (ppb)	<input type="checkbox"/> Soil	RCRA 8	RCRA 11
<input type="checkbox"/> TCLP	<input type="checkbox"/> ICP (PPM)	<input type="checkbox"/> Paint Chips (cm)	<input type="checkbox"/> Dust Wipes		<input type="checkbox"/> Barium	<input type="checkbox"/> Chromium
	<input type="checkbox"/> ICPAA (ppb)	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Waste Water		<input type="checkbox"/> Arsenic	<input type="checkbox"/> Mercury
	<input type="checkbox"/> CVAA (ppm)	<input type="checkbox"/> Other			<input type="checkbox"/> Selenium	<input type="checkbox"/> Cadmium
						<input checked="" type="checkbox"/> Lead
						<input type="checkbox"/> Copper
						<input type="checkbox"/> Zinc
						<input type="checkbox"/> Other

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com


☐ Call () ☐ Fax () ☐ Email

Total Number of Samples 7

Sample ID	Description	A/R
1	JCPH-Pb1-01	
2	Pb2-01	
3	Pb3-01	
4	Pb4-01	
5	Pb5-01	
6	Pb6-01	
7	Pb7-01	
8		
9		
10		
11		
12		
13		
14		
15		

Print Name	Signature	Company	Date	Time
Sampled by <u>Kim Riche</u>		<u>AECOM</u>	<u>8/20/18-8/23/18</u>	<u>11:00am</u>
Relinquish by <u>Kim Riche</u>		<u>AECOM</u>	<u>8/27/18</u>	<u>1:20pm</u>

Office Use Only

Received by	Signature	Company	Date	Time
Analyzed by <u>Kim Riche</u>		<u>nvl labs</u>	<u>8/27/18</u>	<u>1:40pm</u>
Called by				
Faxed/Email by				

August 29, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600

Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816772.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Metals/Organics Labs Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle
Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu
Project Location: JC Boyle Pumphouse

Batch #: 1816772.00

Matrix: Paint
Method: EPA 3051/7000B
Client Project #: 60537920.2.4a
Date Received: 8/27/2018
Samples Received: 1
Samples Analyzed: 1

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086350	JCPH-Pb1-01	0.1656	60	< 60	<0.0060

Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/29/2018

Date Issued: 08/29/2018

Shalini Patel, Metals/Organics Labs

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Company AECOM-Seattle **NVL Batch Number** 1816772.00
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Pumphouse

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 1

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086350	JCPH-Pb1-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/29/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 5:10 PM

Entered By: Soumeiya Benzina

1816772



METALS CHAIN OF CUSTODY

Turn Around Time

☐ 2 Hour☐ 4 Hours☐ 24 Hours☐ 2 Days☐ 3 Days☐ 4 Days☒ 5 Days☐ 6-10 Days

Please call for TAT less than 24 Hours

Company **AECOM**
 Address **1111 Third Avenue Suite 1600**
Seattle, WA 98101
 Phone **206.438.2700**

Project Manager **Nicole Gladu**
 Cell () -
 Email **nicole.gladu@aecom.com**
 Fax () -

Project Name/Number **60537920.2.4a** Project Location **JC Boyle Pumphouse**

<input type="checkbox"/> TCE/TH Metals	<input checked="" type="checkbox"/> AAA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Paint Chips (Pb)	<input type="checkbox"/> Soil	RCRA 8	RCRA 11
<input type="checkbox"/> TCLP	<input type="checkbox"/> ICP (PPM)	<input type="checkbox"/> Paint Chips (Zn)	<input type="checkbox"/> Dust Wipes		<input type="checkbox"/> Barium	<input type="checkbox"/> Chromium
	<input type="checkbox"/> GFAA (ppb)	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Waste Water		<input type="checkbox"/> Silver	<input type="checkbox"/> Copper
	<input type="checkbox"/> CVA (ppb)	<input type="checkbox"/> Other			<input type="checkbox"/> Arsenic	<input type="checkbox"/> Mercury
					<input checked="" type="checkbox"/> Lead	<input type="checkbox"/> Zinc
					<input type="checkbox"/> Selenium	<input type="checkbox"/> Cadmium
						<input type="checkbox"/> Other

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**

☐ Call () - ☐ Fax () - ☐ Email

Total Number of Samples 1

	Sample ID	Description	A/R
1	JCPH - Pb1-01		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	Kim Riche		AECOM	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

August 29, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816771.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

Shalini Patel, Metals/Organics Labs Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101**Attention: Ms. Nicole Gladu**

Project Location: JC Boyle Residence 1

Batch #: 1816771.00

Matrix: Paint

Method: EPA 3051/7000B

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 5

Samples Analyzed: 5

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086345	JCRI-Pb1-01	0.1328	75	< 75	<0.0075
18086346	JCRI-Pb2-01	0.1677	60	< 60	<0.0060
18086347	JCRI-Pb7-01	0.1887	53	< 53	<0.0053
18086348	JCRI-Pb8-01	0.2166	46	< 46	<0.0046
18086349	JCRI-Pb9-01	0.1934	52	< 52	<0.0052


Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/29/2018

Date Issued: 08/29/2018


Shalini Patel, Metals/Organics Labs

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Company AECOM-Seattle **NVL Batch Number** 1816771.00
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Residence 1

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 5

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086345	JCRI-Pb1-01		A
2	18086346	JCRI-Pb2-01		A
3	18086347	JCRI-Pb7-01		A
4	18086348	JCRI-Pb8-01		A
5	18086349	JCRI-Pb9-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/29/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 5:07 PM

Entered By: Soumeiya Benzina

METALS CHAIN OF CUSTODY

Turn Around Time

- ☐ 2 Hour ☐ 4
☐ 2 Days ☐ 3 Days ☐ 4 Days
☐ 5 Days ☐ 6-10 Days
 Please call for TAT less than 24 Hours

1816771

Company AECOM
 Address 1111 Third Avenue Suite 1600
Seattle, WA 98101
 Phone 206.438.2700

Project Manager Nicole Gladu
 Cell ()
 Email nicole.gladu@aecom.com
 Fax ()

Project Name/Number 60537920.2.4a Project Location JC Boyle Residence 1

<input type="checkbox"/> Total Metals <input checked="" type="checkbox"/> TSP <input type="checkbox"/> GFAA (ppm) <input type="checkbox"/> GFAA (ppb) <input type="checkbox"/> CuAA (ppb)	<input checked="" type="checkbox"/> FAA (ppm) <input type="checkbox"/> GCP (ppm) <input type="checkbox"/> GFAA (ppm) <input type="checkbox"/> CuAA (ppb)	<input type="checkbox"/> Air Filter <input type="checkbox"/> Paint Chip Test <input type="checkbox"/> Drinking Water <input type="checkbox"/> Other	<input type="checkbox"/> Paint Chips (Pp) <input type="checkbox"/> Dust Wipes <input type="checkbox"/> Waste Water	<input type="checkbox"/> Soil RCRA 8 <input type="checkbox"/> Barium <input type="checkbox"/> Chromium <input type="checkbox"/> Silver <input type="checkbox"/> Arsenic <input type="checkbox"/> Mercury <input checked="" type="checkbox"/> Lead <input type="checkbox"/> Selenium <input type="checkbox"/> Cadmium	RCRA 11 <input type="checkbox"/> Copper <input type="checkbox"/> Zinc <input type="checkbox"/> Other
---	---	--	--	--	---

Reporting Instructions Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com

☐ Call () ☐ Fax () ☐ Email

Total Number of Samples 5

Sample ID	Description	A/R
1	JCR1-Pb1-01	
2	Pb2-01	
3	Pb7-01	
4	Pb8-01	
5	Pb9-01	
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by			Mullebs	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

August 29, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816765.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Metals/Organics Labs Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle
Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu
Project Location: JC Boyle Residence 2

Batch #: 1816765.00

Matrix: Paint
Method: EPA 3051/7000B
Client Project #: 60537920.2.4a
Date Received: 8/27/2018
Samples Received: 2
Samples Analyzed: 2

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086311	JCR2-Pb1-01	0.1712	58	< 58	<0.0058
18086312	JCR2-Pb2-01	0.1016	98	< 98	<0.0098


Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/29/2018

Date Issued: 08/29/2018


Shalini Patel, Metals/Organics Labs

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Company AECOM-Seattle **NVL Batch Number** 1816765.00
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Residence 2

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 2

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086311	JCR2-Pb1-01		A
2	18086312	JCR2-Pb2-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/29/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:52 PM

Entered By: Emily Schubert

METALS CHAIN OF CUSTODY

Turn Around

☐ 2 H

☐ 2 Days

☐ 5 Days

Please call for TAT less than 24 Hours

1816765

☐ 3 Days

☐ 6-10 Days

☐ 4 Days

Company **AECOM**

Address **1111 Third Avenue Suite 1600**

Seattle, WA 98101

Phone **206.438.2700**

Project Manager **Nicole Gladu**

Cell () -

Email **nicole.gladu@aecom.com**

Fax () -

Project Name/Number **60537920.2.4a**

Project Location **JC Boyle**

Residence 2

☐ Total Metals

☒ FAA (ppm)

☐ Air Filter

☐ Paint Chips (%)

☐ Soil

RCRA 8

RCRA 11

☐ TCLP

☐ ICP (PPM)

☐ Paint Chips (cm)

☐ Dust Wipes

☐ Barium

☐ Chromium

☐ Silver

☐ Cobalt

☐ GFAA (ppb)

☐ Drinking Water

☐ Waste Water

☐ Arsenic

☐ Mercury

☒ Lead

☐ Zinc

☐ CVAA (ppb)

☐ Other

☐ Selenium

☐ Cadmium

☐ Other

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**

☐ Call () -



☐ Fax () -

☐ Email


Total Number of Samples

2

Sample ID	Description	A/R
1	JCR2 - PB1-01	
2	PB2-01	
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Print Name	Signature	Company	Date	Time
Sampled by Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

Print Name	Signature	Company	Date	Time
Received by Kim Riche		AECOM	8/27/18	1:40pm
Analyzed by				
Called by				
Faxed/Email by				

August 31, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600

Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816769.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. if you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Lab Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle
Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu
Project Location: JC Boyle Spillway House

Batch #: 1816769.00

Matrix: Paint
Method: EPA 3051/7000B
Client Project #: 60537920.2.4a
Date Received: 8/27/2018
Samples Received: 1
Samples Analyzed: 1

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086337	JCSW-Pb1-01	0.2039	49	2200	0.22


Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/31/2018

Date Issued: 08/31/2018


Shalini Patel, Lab Supervisor

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Company AECOM-Seattle **NVL Batch Number** **1816769.00**
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Spillway House

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 1

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086337	JCSW-Pb1-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/31/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:58 PM

Entered By: Emily Schubert

METALS CHAIN OF CUSTODY

Turn Around Time

☐ 2 Hour

☐ 2 Days

☒ 3 Days

Please call for TAT less than 24 Hours

☐ 3 Days

☐ 6-10 Days

☐ 4 Days

1816769

Company **AECOM**
Address **1111 Third Avenue Suite 1600**
Seattle, WA 98101
Phone **206.438.2700**

Project Manager **Nicole Gladu**
Cell ()
Email **nicole.gladu@aecom.com**
Fax ()

Project Name/Number **60537920.2.4a** Project Location **JC Boyle** *Spillway House*

<input type="checkbox"/> Total Metals	<input checked="" type="checkbox"/> AAA (ppm)	<input type="checkbox"/> Air Filter	<input type="checkbox"/> Paint Chips (ps)	<input type="checkbox"/> Soil	RCRA 8	RCRA 11
<input type="checkbox"/> TCLP	<input type="checkbox"/> HCP (PPM)	<input type="checkbox"/> Paint Chips (cm)	<input type="checkbox"/> Dust Wipes		<input type="checkbox"/> Barium	<input type="checkbox"/> Chromium
	<input type="checkbox"/> GEAA (ppm)	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Waste Water		<input type="checkbox"/> Arsenic	<input type="checkbox"/> Mercury
	<input type="checkbox"/> CVAA (ppm)	<input type="checkbox"/> Oil			<input type="checkbox"/> Selenium	<input type="checkbox"/> Cadmium
						<input type="checkbox"/> Silver
						<input type="checkbox"/> Copper
						<input type="checkbox"/> Zinc
						<input type="checkbox"/> Other

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**

☐ Call () ☐ Fax () ☐ Email

Total Number of Samples **1**

	Sample ID	Description	A/R
1	JCSW- P51-01		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche	<i>[Signature]</i>	AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche	<i>[Signature]</i>	AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	<i>[Signature]</i>	<i>[Signature]</i>	NVL Labs	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					

August 29, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816768.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Metals/Organics Labs Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle

Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu

Project Location: JC Boyle Vehicle Storage

Batch #: 1816768.00

Matrix: Paint

Method: EPA 3051/7000B

Client Project #: 60537920.2.4a

Date Received: 8/27/2018

Samples Received: 5

Samples Analyzed: 5

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086332	JCVS-Pb1-01	0.0850	120	< 120	<0.012
18086333	JCVS-Pb2-01	0.1956	51	< 51	<0.0051
18086334	JCVS-Pb3-01	0.1739	58	< 58	<0.0058
18086335	JCVS-Pb4-01	0.2095	48	150	0.015
18086336	JCVS-Pb5-01	0.1765	57	< 57	<0.0057


Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/29/2018

Date Issued: 08/29/2018


Shalini Patel, Metals/Organics Labs

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Company AECOM-Seattle
Address 1111 3rd Avenue Ste. 1600
 Seattle, WA 98101
Project Manager Ms. Nicole Gladu
Phone (206) 438-2700
Cell (206) 240-0644
NVL Batch Number 1816768.00
TAT 5 Days **AH** No
Rush TAT
Due Date 9/4/2018 **Time** 1:40 PM
Email nicole.gladu@aecom.com
Fax (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Vehicle Storage

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 5

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086332	JCVS-Pb1-01		A
2	18086333	JCVS-Pb2-01		A
3	18086334	JCVS-Pb3-01		A
4	18086335	JCVS-Pb4-01		A
5	18086336	JCVS-Pb5-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/29/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 4:56 PM

Entered By: Soumeiya Benzina

METALS CHAIN OF CUSTODY

Turn Around Time

- ☐ 2 Hour ☐ 4 H
☐ 2 Days ☐ 3 Days ☐ 4 Days
☒ 5 Days ☐ 6-10 Days

Please call for TAT less than 24 Hours

1816768

Company **AECOM**
Address **1111 Third Avenue Suite 1600**
Seattle, WA 98101
Phone **206.438.2700**

Project Manager **Nicole Gladu**
Cell ()
Email **nicole.gladu@aecom.com**
Fax ()

Project Name/Number **60537920.2.4a** Project Location **JC Boyle** *Vehicle Storage*

<input type="checkbox"/> Total Metals <input checked="" type="checkbox"/> FAAs (ppm) <input type="checkbox"/> TCLP <input type="checkbox"/> ICP (PPM) <input type="checkbox"/> GPAA (ppm) <input type="checkbox"/> CVAA (ppm)	<input type="checkbox"/> Air Filter <input type="checkbox"/> Paint Chips (cm) <input type="checkbox"/> Drinking Water <input type="checkbox"/> Waste Water <input type="checkbox"/> Other	<input type="checkbox"/> Paint Chips (Fe) <input type="checkbox"/> Soil <input type="checkbox"/> Dust Wipes <input type="checkbox"/> RCRA 8 <input type="checkbox"/> Barium <input type="checkbox"/> Arsenic <input type="checkbox"/> Selenium <input type="checkbox"/> Chromium <input type="checkbox"/> Mercury <input type="checkbox"/> Cadmium <input checked="" type="checkbox"/> Lead	<input type="checkbox"/> RCRA 11 <input type="checkbox"/> Copper <input type="checkbox"/> Zinc <input type="checkbox"/> Other
--	---	---	--

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**

☐ Call () ☐ Fax () ☐ Email

Total Number of Samples 5

Sample ID	Description	A/R
1	JCVS-Pb1-01	
2	Pb2-01	
3	Pb3-01	
4	Pb4-01	
5	Pb5-01	
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Print Name	Signature	Company	Date	Time
Sampled by Kim Riche	<i>[Signature]</i>	AECOM	8/20/18-8/23/18	11:00am
Relinquish by Kim Riche	<i>[Signature]</i>	AECOM	8/27/18	1:30pm

Office Use Only

Received by	Signature	Company	Date	Time
Analyzed by <i>[Signature]</i>	<i>[Signature]</i>	<i>Nullos</i>	8/27/18	1:40pm
Called by				
Faxed/Email by				

August 29, 2018

Nicole Gladu

AECOM-Seattle

1111 3rd Avenue Ste. 1600
Seattle, WA 98101



Laboratory | Management | Training

RE: Metals Analysis; NVL Batch # 1816777.00

Dear Ms. Gladu,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shalini Patel".

Shalini Patel, Metals/Organics Labs Supervisor

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com



NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

Analysis Report

Total Lead (Pb)

Client: AECOM-Seattle
Address: 1111 3rd Avenue Ste. 1600
Seattle, WA 98101

Attention: Ms. Nicole Gladu
Project Location: JC Boyle Warehouse

Batch #: 1816777.00

Matrix: Paint
Method: EPA 3051/7000B
Client Project #: 60537920.2.4a
Date Received: 8/27/2018
Samples Received: 1
Samples Analyzed: 1

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
18086363	JCWH-Pb1-01	0.1450	69	15000	1.5

Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Shalini Patel

Date Analyzed: 08/29/2018

Date Issued: 08/29/2018

Shalini Patel, Metals/Organics Labs

mg/ Kg =Milligrams per kilogram

Percent = Milligrams per kilogram / 10000

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

Company AECOM-Seattle **NVL Batch Number** 1816777.00
Address 1111 3rd Avenue Ste. 1600 **TAT** 5 Days **AH** No
 Seattle, WA 98101 **Rush TAT**
Project Manager Ms. Nicole Gladu **Due Date** 9/4/2018 **Time** 1:40 PM
Phone (206) 438-2700 **Email** nicole.gladu@aecom.com
Cell (206) 240-0644 **Fax** (866) 495-5288

Project Name/Number: 60537920.2.4a **Project Location:** JC Boyle Warehouse

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 1

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	18086363	JCWH-Pb1-01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Client				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Fatima Khan		NVL	8/27/18	1340
Analyzed by	Yasuyuki Hida		NVL	8/29/18	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions:

Date: 8/27/2018

Time: 5:30 PM

Entered By: Soumeiya Benzina

METALS CHAIN OF CUSTODY

Turn Around Time

- ☐ 2 Hour ☐ 4 H
☐ 2 Days ☐ 3 Days ☐ 4 Days
☐ 5 Days ☐ 6-10 Days
 Please call for TAT less than 24 Hours

1816777

Company **AECOM**
 Address **1111 Third Avenue Suite 1600**
Seattle, WA 98101
 Phone **206.438.2700**

Project Manager **Nicole Gladu**
 Cell ()
 Email **nicole.gladu@aecom.com**
 Fax ()

Project Name/Number **60537920.2.4a** Project Location **JC Boyle Warehouse**

<input type="checkbox"/> Total Metals <input checked="" type="checkbox"/> AAA (ppm) <input type="checkbox"/> TCLP <input type="checkbox"/> ICP (PPM) <input type="checkbox"/> GFAA (ppb) <input type="checkbox"/> CVAA (ppb)	<input type="checkbox"/> Air Filter <input type="checkbox"/> Paint Chips (cont) <input type="checkbox"/> Drinking Water <input type="checkbox"/> Other	<input type="checkbox"/> Paint Chips (dry) <input type="checkbox"/> Dust Wipes <input type="checkbox"/> Waste Water	RCRA 8 <input type="checkbox"/> Barium <input type="checkbox"/> Arsenic <input type="checkbox"/> Selenium <input type="checkbox"/> Chromium <input type="checkbox"/> Mercury <input type="checkbox"/> Cadmium <input checked="" type="checkbox"/> Lead	RCRA 11 <input type="checkbox"/> Copper <input type="checkbox"/> Zinc <input type="checkbox"/> Other
---	---	---	--	--

Reporting Instructions **Please email: kimberly.riche@aecom.com & shannon.mackay@aecom.com**

☐ Call () ☐ Fax () ☐ Email

Total Number of Samples **1**

Sample ID	Description	A/R
1	JCWH- Pbl-01	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

	Print Name	Signature	Company	Date	Time
Sampled by	Kim Riche		AECOM	8/20/18-8/23/18	11:00am
Relinquish by	Kim Riche		AECOM	8/27/18	1:30pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by			Nullebs	8/27/18	1:40pm
Analyzed by					
Called by					
Faxed/Email by					



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

AECOM

Nicole Gladu
1111 3rd Avenue Suite 1600
Seattle, WA 98101

RE: JC Boyle
Work Order Number: 1808336

September 04, 2018

Attention Nicole Gladu:

Fremont Analytical, Inc. received 1 sample(s) on 8/27/2018 for the analyses presented in the following report.

Polychlorinated Biphenyls (PCB) by EPA 8270 (GCMS)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike C. Ridgeway". The signature is fluid and cursive.

Mike Ridgeway
Laboratory Director

CC:
Kimberly Riche
Shannon Mackay



Date: 09/04/2018

CLIENT: AECOM
Project: JC Boyle
Work Order: 1808336

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1808336-001	JCPH-PCB-01	08/23/2018 8:08 AM	08/27/2018 2:33 PM

CLIENT: AECOM
Project: JC Boyle

WorkOrder Narrative:

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Analytical Report

Work Order: 1808336
Date Reported: 9/4/2018

Client: AECOM

Collection Date: 8/23/2018 8:08:00 AM

Project: JC Boyle

Lab ID: 1808336-001

Matrix: Solid

Client Sample ID: JCPH-PCB-01

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

Polychlorinated Biphenyls (PCB) by EPA 8270 (GCMS)

Batch ID: 21764

Analyst: IH

Aroclor 1016	ND	0.820		mg/Kg	1	8/29/2018 6:12:43 PM
Aroclor 1221	ND	0.820		mg/Kg	1	8/29/2018 6:12:43 PM
Aroclor 1232	ND	0.820		mg/Kg	1	8/29/2018 6:12:43 PM
Aroclor 1242	ND	0.820		mg/Kg	1	8/29/2018 6:12:43 PM
Aroclor 1248	ND	0.820		mg/Kg	1	8/29/2018 6:12:43 PM
Aroclor 1254	ND	0.820		mg/Kg	1	8/29/2018 6:12:43 PM
Aroclor 1260	ND	0.820		mg/Kg	1	8/29/2018 6:12:43 PM
Aroclor 1262	ND	0.820		mg/Kg	1	8/29/2018 6:12:43 PM
Aroclor 1268	ND	0.820		mg/Kg	1	8/29/2018 6:12:43 PM
Total PCBs	ND	0.820		mg/Kg	1	8/29/2018 6:12:43 PM
Surr: Decachlorobiphenyl	87.2	20 - 191		%Rec	1	8/29/2018 6:12:43 PM
Surr: Tetrachloro-m-xylene	95.1	20 - 173		%Rec	1	8/29/2018 6:12:43 PM

Work Order: 1808336

CLIENT: AECOM

Project: JC Boyle

QC SUMMARY REPORT

Polychlorinated Biphenyls (PCB) by EPA 8270 (GCMS)

Sample ID	MB-21764	SampType:	MBLK		Units:	mg/Kg			Prep Date:	8/29/2018		RunNo:	45884	
Client ID:	MBLKS	Batch ID:	21764						Analysis Date:	8/29/2018		SeqNo:	888325	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val		%RPD	RPDLimit	Qual	
Aroclor 1016		ND	0.100											
Aroclor 1221		ND	0.100											
Aroclor 1232		ND	0.100											
Aroclor 1242		ND	0.100											
Aroclor 1248		ND	0.100											
Aroclor 1254		ND	0.100											
Aroclor 1260		ND	0.100											
Aroclor 1262		ND	0.100											
Aroclor 1268		ND	0.100											
Total PCBs		ND	0.100											
Surr: Decachlorobiphenyl		0.0469		0.05000		93.8	20	191						
Surr: Tetrachloro-m-xylene		0.0507		0.05000		101	20	173						

Sample ID	LCS1-21764	SampType:	LCS	Units:	mg/Kg	Prep Date:	8/29/2018	RunNo:	45884		
Client ID:	LCSS	Batch ID:	21764			Analysis Date:	8/29/2018	SeqNo:	888326		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.930	0.100	1.000	0	93.0	38.4	155				
Aroclor 1260	0.760	0.100	1.000	0	76.0	42.8	168				
Surr: Decachlorobiphenyl	0.0501		0.05000		100	20	191				
Surr: Tetrachloro-m-xylene	0.0543		0.05000		109	20	173				

Sample ID	LCS1D-21764	SampType:	LCSD	Units:	mg/Kg	Prep Date:	8/29/2018	RunNo:	45884		
Client ID:	LCSS02	Batch ID:	21764			Analysis Date:	8/29/2018	SeqNo:	888327		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.909	0.100	1.000	0	90.9	38.4	155	0.9302	2.32	30	
Aroclor 1260	0.733	0.100	1.000	0	73.3	42.8	168	0.7600	3.61	30	
Surr: Decachlorobiphenyl	0.0469		0.05000		93.7	20	191		0		
Surr: Tetrachloro-m-xylene	0.0512		0.05000		102	20	173		0		

Work Order: 1808336

CLIENT: AECOM

Project: JC Boyle

QC SUMMARY REPORT

Polychlorinated Biphenyls (PCB) by EPA 8270 (GCMS)

Sample ID	LCS1D-21764	SampType:	LCSD	Units:	mg/Kg	Prep Date:	8/29/2018	RunNo:	45884		
Client ID:	LCSS02	Batch ID:	21764			Analysis Date:	8/29/2018	SeqNo:	888327		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	LCS2-21764	SampType:	LCS	Units:	mg/Kg	Prep Date:	8/29/2018	RunNo:	45884		
Client ID:	LCSS	Batch ID:	21764			Analysis Date:	8/29/2018	SeqNo:	888331		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1254	0.816	0.100	1.000	0	81.6	40.9	164				
Surr: Decachlorobiphenyl	0.0490		0.05000		97.9	20	191				
Surr: Tetrachloro-m-xylene	0.0489		0.05000		97.7	20	173				

Client Name: **URS**
 Logged by: **Clare Griggs**

Work Order Number: **1808336**
 Date Received: **8/27/2018 2:33:00 PM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
 2. How was the sample delivered? Courier

Log In

3. Coolers are present? Yes ☐ No ☒ NA ☐
No cooler present.
 4. Shipping container/cooler in good condition? Yes ☒ No ☐
 5. Custody Seals present on shipping container/cooler?
 (Refer to comments for Custody Seals not intact) Yes ☐ No ☐ Not Required ☒
 6. Was an attempt made to cool the samples? Yes ☐ No ☒ NA ☐
Unknown prior to receipt.
 7. Were all items received at a temperature of >0°C to 10.0°C * Yes ☐ No ☒ NA ☐
Refer to item information.
 8. Sample(s) in proper container(s)? Yes ☒ No ☐
 9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
 10. Are samples properly preserved? Yes ☒ No ☐
 11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
 12. Is there headspace in the VOA vials? Yes ☐ No ☐ NA ☒
 13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
 14. Does paperwork match bottle labels? Yes ☒ No ☐
 15. Are matrices correctly identified on Chain of Custody? Yes ☐ No ☒
 16. Is it clear what analyses were requested? Yes ☒ No ☐
 17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: Date
 By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
 Regarding:
 Client Instructions:

19. Additional remarks:

Item Information

Item #	Temp °C
Sample	23.1

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



Fremont
Analytical

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 8/27/18 Page: 1 of 1

Laboratory Project No (Internal):

Special Remarks:

18083380

Client: AECOM

Address: 1111 Third Avenue

City, State, Zip: Seattle, Wa 98101

Telephone: 253-720-3980

Fax:

Project Name: JC Boyle

Project No: 60537920.2.4a

Collected by: Kim Riche

Location: Nicole Gladu

Report To (PM): kimberly.riche@aecom.com & shannon.mackay@aecom.com

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) Dissolved (D)	Anions (IC)**	EDB (8011)	PCB 8270	Comments
-------------	-------------	-------------	-----------------------	-----------------------	---------	------	------------------------------	-----------------------------------	--------------------------------------	------------------------	-----------------------	-----------------------	-----------------------------	---------------------------	---------------	------------	----------	----------

1 JCPH-PCB-01

08/23/18

08:08

1

Powerhouse HSA 10

2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle):

Individual:

**Anions (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate-Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished

Date/Time

8/27/18 12:15pm

Received

Date/Time

8/27/2018 1433

Relinquished

Date/Time

Received

Date/Time

x

x

Turn-around Time: ☒ Standard ☐ 3 Day ☐ 2 Day ☐ Next Day ☐ Same Day (specify)

APPENDIX D PERSONNEL AND LABORATORY CERTIFICATIONS

Certificate of Completion

This is to certify that
Kimberly D. Riche
has satisfactorily completed
4 hours of refresher training as an
AHERA Building Inspector

to comply with the training requirements of
TSCA Title II, 40 CFR 763 (AHERA)

EPA Provider # 1085

168531
Certificate Number



Jul 11, 2018
Date(s) of Training

Expires in 1 year.

Exam Score: N/A
If appropriate:

A handwritten signature in black ink, likely of the instructor, written over a horizontal line.

Instructor

ARGUS PACIFIC, INC / 1900 WEST NICKERSON ST, SUITE 315 / SEATTLE, WASHINGTON 98119 / 206.285.3373 / ARGUSPACIFIC.COM

Certificate Of Completion

Asbestos Building Inspector Refresher Course

DOSH #:CA-015-06

Shannon MacKay

ABIR0115190004N18965

David Wallach

Principal Instructor

1/15/2019

Course Start Date

1/15/2019

Course End Date

1/15/2019

Exam Date

1/15/2020

Expiration Date

This course satisfies the education requirements for Asbestos accreditation under the Toxic Substances Control Act, Title II. This course has been approved by the Department of Industrial Relations, Division of Occupational Safety and Health of the State of California

NATEC International, Inc.

National Association of Training and Environmental Consulting

1100 Technology Circle- Suite A, Anaheim, CA 92805 • www.natecintl.com • 800-969-3228



Michael W. Horner

Michael W. Horner

Training Director

Important Industry Contacts

CAL-OSHA: Ph# (916) 574-2993
(916) 483-0572 Fax Notification
Web: www.dir.ca.gov or calosha.com

CDPH/CLPPB: Ph# (510) 620-5600
Web: www.cdph.ca.gov/programs/CLPPB

SCAQMD: Ph# (909) 396-3739
Fax# (909) 396-3342

BAAQMD: Ph# (415) 749-4762

NATEC International, Inc.

National Association of Training and Environmental Consulting

Anaheim, CA • Oakland, CA • Fresno, CA • Sacramento, CA

Asbestos • Lead • Mold • HAZWOPER

P.O. Box 25205 Anaheim, CA 92825-5205
(714) 678-2750, (800) 969-3228, Fax (714) 678-2757
www.natecintl.com

NATEC International, Inc.

National Association of Training and Environmental Consulting
*Note: Card is not suitable substitute for certificate and is not accepted by SCAQMD as proof of certification

This Card Acknowledges That
Shannon MacKay

Holds Training Certification For
Asbestos Building Inspector Refresher Course

Expiration: 01/15/2020

Training Date 1/15/2019
Certificate No. ABIR0115190004N18965

Michael W. Horner
Training Director

Certificate of Completion

This is to certify that
Shannon R. MacKay

has satisfactorily completed
4 hours of refresher training as an
AHERA Building Inspector

to comply with the training requirements of
TSCA Title II, 40 CFR 763 (AHERA)

EPA Provider # 1085

167196
Certificate Number



Instructor



May 2, 2018
Date(s) of Training

Expires in 1 year.

Exam Score:
If appropriate:

ARGUS PACIFIC, INC / 1900 WEST NICKERSON ST, SUITE 315 / SEATTLE, WASHINGTON 98119 / 206.285.3373 / ARGUSPACIFIC.COM



STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

CALIFORNIA STATE



ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM

CERTIFICATE OF ENVIRONMENTAL ACCREDITATION

Is hereby granted to

NVL Laboratory

4708 Aurora Avenue North

Seattle, WA 98103

Scope of the certificate is limited to the
"Fields of Testing"
which accompany this Certificate.

Continued accredited status depends on successful completion of on-site inspection,
proficiency testing studies, and payment of applicable fees.

This Certificate is granted in accordance with provisions of
Section 100825, et seq. of the Health and Safety Code.

Certificate No.: **2757**

Expiration Date: **9/30/2019**

Effective Date: **10/1/2018**

Sacramento, California
subject to forfeiture or revocation

Christine Sotelo, Chief
Environmental Laboratory Accreditation Program



**CALIFORNIA STATE
ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM
Accredited Fields of Testing**



NVL Laboratories, Inc.
PLM Dept.
4708 Aurora Avenue North
Seattle, WA 98103
Phone: (206) 547-0100

Certificate No. 2757
Expiration Date 9/30/2019

Field of Testing: 121 - Bulk Asbestos Analysis of Hazardous Waste

121.010	001	Bulk Asbestos	EPA 600/M4-82-020
---------	-----	---------------	-------------------

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 102063-0

NVL Laboratories, Inc.
Seattle, WA

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

Asbestos Fiber Analysis

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).*

2018-10-01 through 2019-09-30

Effective Dates



A handwritten signature in blue ink, reading "Dana S. Laman".

For the National Voluntary Laboratory Accreditation Program



AIHA Laboratory Accreditation Programs, LLC

acknowledges that

NVL Laboratories, Inc.

4708 Aurora Avenue N., Seattle, WA 98103

Laboratory ID: 101861

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

LABORATORY ACCREDITATION PROGRAMS

- ✓ **INDUSTRIAL HYGIENE**
- ✓ **ENVIRONMENTAL LEAD**
- ✓ **ENVIRONMENTAL MICROBIOLOGY**
- ☐ **FOOD**
- ✓ **UNIQUE SCOPES**

Accreditation Expires: June 01, 2019

Accreditation Expires: June 01, 2019

Accreditation Expires: June 01, 2019

Accreditation Expires:

Accreditation Expires: June 01, 2019

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

William Walsh, CIH
Chairperson, Analytical Accreditation Board

Cheryl O. Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision 15: 03/30/2016

Date Issued: 05/31/2017



AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

NVL Laboratories, Inc.

4708 Aurora Avenue N., Seattle, WA 98103

Laboratory ID: **101861**

Issue Date: 05/31/2017

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 04/01/1997

IHLAP Scope Category	Field of Testing (FoT) (FoTs cover all relevant IH matrices)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte <i>(for internal methods only)</i>
Spectrometry Core	Inductively-Coupled Plasma	ICP/AES	EPA 3051	
			NIOSH 7300 Modified	
	X-ray Diffraction (XRD)		NIOSH 7500	
Asbestos/Fiber Microscopy Core	Phase Contrast Microscopy (PCM)		NIOSH 7400	
Miscellaneous Core	Gravimetric		NIOSH 0500 Modified	
			NIOSH 0600 Modified	

A complete listing of currently accredited Industrial Hygiene laboratories is available on the AIHA-LAP, LLC website at: <http://www.aihaaccreditedlabs.org>



AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

NVL Laboratories, Inc.

4708 Aurora Avenue N., Seattle, WA 98103

Laboratory ID: **101861**

Issue Date: 05/31/2017

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

The EPA recognizes the AIHA-LAP, LLC ELLAP program as meeting the requirements of the National Lead Laboratory Accreditation Program (NLLAP) established under Title X of the Residential Lead-Based Paint Hazard Reduction Act of 1992 and includes paint, soil and dust wipe analysis. Air and composited wipes analyses are not included as part of the NLLAP.

Environmental Lead Laboratory Accreditation Program (ELLAP)

Initial Accreditation Date: 02/07/1997

Field of Testing (FoT)	Technology sub-type/ Detector	Method	Method Description (for internal methods only)
Paint		EPA SW-846 3051	
		EPA SW-846 7000B	
Soil		EPA SW-846 3051	
		EPA SW-846 7000B	
Settled Dust by Wipe		EPA SW-846 3051	
		EPA SW-846 7000B	
Airborne Dust		EPA SW-846 3051	
		NIOSH 7082	

A complete listing of currently accredited Environmental Lead laboratories is available on the AIHA-LAP, LLC website at: <http://www.aihaaccreditedlabs.org>



AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

NVL Laboratories, Inc.

4708 Aurora Avenue N., Seattle, WA 98103

Laboratory ID: **101861**

Issue Date: 05/31/2017

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Environmental Microbiology Laboratory Accreditation Program (EMLAP)

Initial Accreditation Date: 02/01/1997

EMLAP Category	Field of Testing (FoT)	Method	Method Description <i>(for internal methods only)</i>
Fungal	Air - Direct Examination	SOP 12.133	In-House: Analysis of Spore Trap
	Bulk - Direct Examination	SOP 12.133	In-House: Bulk Analysis
	Surface - Direct Examination	SOP 12.133	In-House: Surface Analysis

A complete listing of currently accredited Environmental Microbiology laboratories is available on the AIHA-LAP, LLC website at: <http://www.aihaaccreditedlabs.org>



AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

NVL Laboratories, Inc.

4708 Aurora Avenue N., Seattle, WA 98103

Laboratory ID: **101861**

Issue Date: 05/31/2017

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Unique Scopes Laboratory Accreditation Program (Unique Scopes)

Initial Accreditation Date: 04/01/2013

Unique Scope Category	Field of Testing (FoT)	Method	Method Description <i>(for internal methods only)</i>
Consumer Product Testing	Lead in Paint and Other Similar Surface Coatings	CPSC-CH-E1003-09.1	
	Total Lead in Metal Children's Products	CPSC-CH-E1001-08.2	
	Total Lead in Non-Metal Children's Products	CPSC-CH-E1002-08.1	

A complete listing of currently accredited Unique Scope laboratories is available on the AIHA-LAP, LLC website at: <http://www.aihaaccreditedlabs.org>



STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

CALIFORNIA STATE



ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM

CERTIFICATE OF ENVIRONMENTAL LABORATORY ACCREDITATION

Is hereby granted to

EMSL Analytical Inc.

200 Route 130 North
Cinnaminson, NJ 08077

Scope of the certificate is limited to the
"Fields of Testing"
which accompany this Certificate.

Continued accredited status depends on successful completion of on-site inspection,
proficiency testing studies, and payment of applicable fees.

This Certificate is granted in accordance with provisions of
Section 100825, et seq. of the Health and Safety Code.

Certificate No.: **1877**

Expiration Date: **3/31/2017**

Effective Date: **4/1/2015**

Sacramento, California
subject to forfeiture or revocation

Christine Sotelo, Chief
Environmental Laboratory Accreditation Program



EMSL Analytical Inc.

200 Route 130 North
Cinnaminson, NJ 08077
Phone: (800) 220-3675

Certificate No. 1877
Expiration Date 3/31/2017

Field of Testing: 102 - Inorganic Chemistry of Drinking Water

102.030	001	Bromide	EPA 300.0
102.030	003	Chloride	EPA 300.0
102.030	005	Fluoride	EPA 300.0
102.030	006	Nitrate	EPA 300.0
102.030	007	Nitrite	EPA 300.0
102.030	008	Phosphate, Ortho	EPA 300.0
102.030	009	Sulfate	EPA 300.0
102.100	001	Alkalinity	SM2320B
102.130	001	Conductivity	SM2510B
102.140	001	Total Dissolved Solids	SM2540C
102.175	001	Chlorine, Free and Total	SM4500-Cl G
102.190	001	Cyanide, Total	SM4500-CN E
102.192	001	Cyanide, amenable	SM4500-CN G
102.262	001	Total Organic Carbon TOC	SM5310C
102.270	001	Surfactants	SM5540C
102.520	001	Calcium	EPA 200.7
102.520	002	Magnesium	EPA 200.7
102.520	003	Potassium	EPA 200.7
102.520	004	Silica	EPA 200.7
102.520	005	Sodium	EPA 200.7
102.520	006	Hardness (calculation)	EPA 200.7

Field of Testing: 103 - Toxic Chemical Elements of Drinking Water

103.030	001	Mercury	SM3112B
103.060	001	Aluminum	SM3120B
103.060	003	Barium	SM3120B
103.060	007	Chromium	SM3120B
103.060	009	Iron	SM3120B
103.060	011	Manganese	SM3120B
103.060	015	Silver	SM3120B
103.060	017	Zinc	SM3120B
103.130	007	Chromium	EPA 200.7
103.130	008	Copper	EPA 200.7
103.130	009	Iron	EPA 200.7
103.130	011	Manganese	EPA 200.7
103.130	015	Silver	EPA 200.7
103.130	017	Zinc	EPA 200.7
103.140	001	Aluminum	EPA 200.8
103.140	002	Antimony	EPA 200.8

As of 9/16/2015, this list supersedes all previous lists for this certificate number.
Customers: Please verify the current accreditation standing with the State.

103.140	003	Arsenic	EPA 200.8
103.140	004	Barium	EPA 200.8
103.140	005	Beryllium	EPA 200.8
103.140	006	Cadmium	EPA 200.8
103.140	007	Chromium	EPA 200.8
103.140	008	Copper	EPA 200.8
103.140	009	Lead	EPA 200.8
103.140	010	Manganese	EPA 200.8
103.140	012	Nickel	EPA 200.8
103.140	013	Selenium	EPA 200.8
103.140	014	Silver	EPA 200.8
103.140	015	Thallium	EPA 200.8
103.140	016	Zinc	EPA 200.8
103.150	009	Lead	EPA 200.9
103.160	001	Mercury	EPA 245.1
103.300	001	Asbestos	EPA 100.1
103.301	001	Asbestos	EPA 100.2

Field of Testing: 104 - Volatile Organic Chemistry of Drinking Water

104.040	000	Volatile Organic Compounds	EPA 524.2
104.040	001	Benzene	EPA 524.2
104.040	007	n-Butylbenzene	EPA 524.2
104.040	008	sec-Butylbenzene	EPA 524.2
104.040	009	tert-Butylbenzene	EPA 524.2
104.040	010	Carbon Tetrachloride	EPA 524.2
104.040	011	Chlorobenzene	EPA 524.2
104.040	015	2-Chlorotoluene	EPA 524.2
104.040	016	4-Chlorotoluene	EPA 524.2
104.040	019	1,3-Dichlorobenzene	EPA 524.2
104.040	020	1,2-Dichlorobenzene	EPA 524.2
104.040	021	1,4-Dichlorobenzene	EPA 524.2
104.040	022	Dichlorodifluoromethane	EPA 524.2
104.040	023	1,1-Dichloroethane	EPA 524.2
104.040	024	1,2-Dichloroethane	EPA 524.2
104.040	025	1,1-Dichloroethene	EPA 524.2
104.040	026	cis-1,2-Dichloroethene	EPA 524.2
104.040	027	trans-1,2-Dichloroethene	EPA 524.2
104.040	028	Dichloromethane	EPA 524.2
104.040	029	1,2-Dichloropropane	EPA 524.2
104.040	033	cis-1,3-Dichloropropene	EPA 524.2
104.040	034	trans-1,3-Dichloropropene	EPA 524.2
104.040	035	Ethylbenzene	EPA 524.2
104.040	037	Isopropylbenzene	EPA 524.2
104.040	039	Naphthalene	EPA 524.2
104.040	041	N-propylbenzene	EPA 524.2
104.040	042	Styrene	EPA 524.2
104.040	044	1,1,2,2-Tetrachloroethane	EPA 524.2
104.040	045	Tetrachloroethene	EPA 524.2

As of 9/16/2015, this list supersedes all previous lists for this certificate number.
Customers: Please verify the current accreditation standing with the State.

104.040	046	Toluene	EPA 524.2
104.040	048	1,2,4-Trichlorobenzene	EPA 524.2
104.040	049	1,1,1-Trichloroethane	EPA 524.2
104.040	050	1,1,2-Trichloroethane	EPA 524.2
104.040	051	Trichloroethene	EPA 524.2
104.040	052	Trichlorofluoromethane	EPA 524.2
104.040	054	1,2,4-Trimethylbenzene	EPA 524.2
104.040	055	1,3,5-Trimethylbenzene	EPA 524.2
104.040	056	Vinyl Chloride	EPA 524.2
104.040	057	Xylenes, Total	EPA 524.2
104.045	001	Bromodichloromethane	EPA 524.2
104.045	002	Bromoform	EPA 524.2
104.045	003	Chloroform	EPA 524.2
104.045	004	Dibromochloromethane	EPA 524.2
104.050	002	Methyl tert-butyl Ether (MTBE)	EPA 524.2
104.050	006	tert-Butyl Alcohol (TBA)	EPA 524.2
104.050	008	Carbon Disulfide	EPA 524.2
104.050	009	Methyl Isobutyl Ketone	EPA 524.2

Field of Testing: 109 - Toxic Chemical Elements of Wastewater

109.010	001	Aluminum	EPA 200.7
109.010	002	Antimony	EPA 200.7
109.010	003	Arsenic	EPA 200.7
109.010	004	Barium	EPA 200.7
109.010	005	Beryllium	EPA 200.7
109.010	007	Cadmium	EPA 200.7
109.010	009	Chromium	EPA 200.7
109.010	010	Cobalt	EPA 200.7
109.010	011	Copper	EPA 200.7
109.010	012	Iron	EPA 200.7
109.010	013	Lead	EPA 200.7
109.010	015	Manganese	EPA 200.7
109.010	016	Molybdenum	EPA 200.7
109.010	017	Nickel	EPA 200.7
109.010	019	Selenium	EPA 200.7
109.010	021	Silver	EPA 200.7
109.010	023	Thallium	EPA 200.7
109.010	024	Tin	EPA 200.7
109.010	026	Vanadium	EPA 200.7
109.010	027	Zinc	EPA 200.7
109.020	001	Aluminum	EPA 200.8
109.020	002	Antimony	EPA 200.8
109.020	003	Arsenic	EPA 200.8
109.020	004	Barium	EPA 200.8
109.020	005	Beryllium	EPA 200.8
109.020	006	Cadmium	EPA 200.8
109.020	007	Chromium	EPA 200.8
109.020	008	Cobalt	EPA 200.8

As of 9/16/2015, this list supersedes all previous lists for this certificate number.
Customers: Please verify the current accreditation standing with the State.

109.020	009	Copper	EPA 200.8
109.020	010	Lead	EPA 200.8
109.020	011	Manganese	EPA 200.8
109.020	012	Molybdenum	EPA 200.8
109.020	013	Nickel	EPA 200.8
109.020	014	Selenium	EPA 200.8
109.020	015	Silver	EPA 200.8
109.020	016	Thallium	EPA 200.8
109.020	017	Vanadium	EPA 200.8
109.020	018	Zinc	EPA 200.8
109.020	021	Iron	EPA 200.8
109.020	022	Tin	EPA 200.8
109.020	023	Titanium	EPA 200.8
109.025	010	Lead	EPA 200.9
109.190	001	Mercury	EPA 245.1
109.370	007	Gold	SM3111B
109.370	010	Lead	SM3111B
109.370	014	Palladium	SM3111B
109.370	015	Platinum	SM3111B
109.400	001	Mercury	SM3112B
109.430	001	Aluminum	SM3120B
109.430	002	Antimony	SM3120B
109.430	005	Beryllium	SM3120B
109.430	007	Cadmium	SM3120B
109.430	009	Chromium	SM3120B
109.430	010	Cobalt	SM3120B
109.430	011	Copper	SM3120B
109.430	012	Iron	SM3120B
109.430	013	Lead	SM3120B
109.430	015	Manganese	SM3120B
109.430	016	Molybdenum	SM3120B
109.430	017	Nickel	SM3120B
109.430	019	Selenium	SM3120B
109.430	021	Silver	SM3120B
109.430	024	Vanadium	SM3120B
109.430	025	Zinc	SM3120B
109.811	001	Chromium (VI)	SM3500-Cr D (18th/19th)

Field of Testing: 114 - Inorganic Chemistry of Hazardous Waste

114.010	001	Antimony	EPA 6010B
114.010	002	Arsenic	EPA 6010B
114.010	003	Barium	EPA 6010B
114.010	004	Beryllium	EPA 6010B
114.010	005	Cadmium	EPA 6010B
114.010	006	Chromium	EPA 6010B
114.010	007	Cobalt	EPA 6010B
114.010	008	Copper	EPA 6010B
114.010	009	Lead	EPA 6010B

As of 9/16/2015, this list supersedes all previous lists for this certificate number.
Customers: Please verify the current accreditation standing with the State.

114.010	010	Molybdenum	EPA 6010B
114.010	011	Nickel	EPA 6010B
114.010	012	Selenium	EPA 6010B
114.010	013	Silver	EPA 6010B
114.010	014	Thallium	EPA 6010B
114.010	015	Vanadium	EPA 6010B
114.010	016	Zinc	EPA 6010B
114.020	001	Antimony	EPA 6020
114.020	002	Arsenic	EPA 6020
114.020	003	Barium	EPA 6020
114.020	004	Beryllium	EPA 6020
114.020	005	Cadmium	EPA 6020
114.020	006	Chromium	EPA 6020
114.020	007	Cobalt	EPA 6020
114.020	008	Copper	EPA 6020
114.020	009	Lead	EPA 6020
114.020	010	Molybdenum	EPA 6020
114.020	011	Nickel	EPA 6020
114.020	012	Selenium	EPA 6020
114.020	013	Silver	EPA 6020
114.020	014	Thallium	EPA 6020
114.020	015	Vanadium	EPA 6020
114.020	016	Zinc	EPA 6020
114.103	001	Chromium (VI)	EPA 7196A
114.130	001	Lead	EPA 7420
114.131	001	Lead	EPA 7421
114.140	001	Mercury	EPA 7470A
114.141	001	Mercury	EPA 7471A

Field of Testing: 115 - Extraction Test of Hazardous Waste

115.020	001	Toxicity Characteristic Leaching Procedure (TCLP)	EPA 1311
115.030	001	Waste Extraction Test (WET)	CCR Chapter 11, Article 5, Appendix II

Field of Testing: 116 - Volatile Organic Chemistry of Hazardous Waste

116.010	000	EDB and DBCP	EPA 8011
116.020	030	Nonhalogenated Volatiles	EPA 8015B
116.020	031	Ethanol and Methanol	EPA 8015B
116.030	001	Gasoline-range Organics	EPA 8015B
116.080	000	Volatile Organic Compounds	EPA 8260B
116.080	120	Oxygenates	EPA 8260B

Field of Testing: 117 - Semi-volatile Organic Chemistry of Hazardous Waste

117.010	001	Diesel-range Total Petroleum Hydrocarbons	EPA 8015B
117.110	000	Extractable Organics	EPA 8270C
117.210	000	Pesticides & PCBs	EPA 8081A
117.220	000	PCBs	EPA 8082
117.250	000	Chlorinated Herbicides	EPA 8151A

Field of Testing: 121 - Bulk Asbestos Analysis of Hazardous Waste

121.010	001	Bulk Asbestos	EPA 600/M4-82-020
---------	-----	---------------	-------------------

As of 9/16/2015, this list supersedes all previous lists for this certificate number.
Customers: Please verify the current accreditation standing with the State.

Field of Testing: 129 - Cryptosporidium & Giardia

129.020	001	Cryptosporidium and Giardia	EPA 1623
129.030	001	Cryptosporidium and Giardia	EPA 1623.1



OREGON

Environmental Laboratory Accreditation Program

ORELAP Fields of Accreditation

ORELAP ID: WA100009

EPA CODE: WA01224

Certificate: WA100009 - 012



Fremont Analytical, Inc.

3600 Fremont Ave. N

Seattle, WA 98103

Issue Date: 5/10/2018 Expiration Date: 5/9/2019

As of 5/10/2018 this list supersedes all previous lists for this certificate number.

Solids

EPA 8270D

5562 Azobenzene
5595 Benzidine
5575 Benzo(a)anthracene
5580 Benzo(a)pyrene
5590 Benzo(g,h,i)perylene
9309 Benzo(j)fluoranthene
5600 Benzo(k)fluoranthene
5585 Benzo[b]fluoranthene
5610 Benzoic acid
5630 Benzyl alcohol
5760 bis(2-Chloroethoxy)methane
5765 bis(2-Chloroethyl) ether
5780 bis(2-Chloroisopropyl) ether
6062 bis(2-Ethylhexyl)adipate
5670 Butyl benzyl phthalate
5680 Carbazole
5855 Chrysene
6065 Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)
9354 Dibenz(a, h) acridine
5900 Dibenz(a, j) acridine
5895 Dibenz(a,h) anthracene
9348 Dibenzo(a, h) pyrene
5890 Dibenzo(a,e) pyrene
5905 Dibenzofuran
6070 Diethyl phthalate
6135 Dimethyl phthalate
5925 Di-n-butyl phthalate
6200 Di-n-octyl phthalate
6205 Diphenylamine
6265 Fluoranthene
6270 Fluorene
6275 Hexachlorobenzene
4835 Hexachlorobutadiene
6285 Hexachlorocyclopentadiene
4840 Hexachloroethane
6315 Indeno(1,2,3-cd) pyrene
6320 Isophorone
5005 Naphthalene
5015 Nitrobenzene
6525 n-Nitrosodiethylamine
6530 n-Nitrosodimethylamine
6545 n-Nitrosodi-n-propylamine
6535 n-Nitrosodiphenylamine



OREGON

Environmental Laboratory Accreditation Program

ORELAP Fields of Accreditation

ORELAP ID: WA100009

EPA CODE: WA01224

Certificate: WA100009 - 012



Fremont Analytical, Inc.

3600 Fremont Ave. N

Seattle, WA 98103

Issue Date: 5/10/2018 Expiration Date: 5/9/2019

As of 5/10/2018 this list supersedes all previous lists for this certificate number.

Solids

EPA 8270D

6605 Pentachlorophenol
6608 Perylene
6615 Phenanthrene
6625 Phenol
6665 Pyrene
5095 Pyridine

EPA 8270D
SIM

10242509

Semivolatile Organic compounds by
GC/MS Selective Ion Monitoring

6380 1-Methylnaphthalene
6385 2-Methylnaphthalene
5500 Acenaphthene
5505 Acenaphthylene
5555 Anthracene
5575 Benzo(a)anthracene
5580 Benzo(a)pyrene
5590 Benzo(g,h,i)perylene
5600 Benzo(k)fluoranthene
5585 Benzo[b]fluoranthene
5670 Butyl benzyl phthalate
5855 Chrysene
6065 Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)
5895 Dibenz(a,h) anthracene
5905 Dibenzofuran
6070 Diethyl phthalate
6135 Dimethyl phthalate
5925 Di-n-butyl phthalate
6200 Di-n-octyl phthalate
6265 Fluoranthene
6270 Fluorene
6315 Indeno(1,2,3-cd) pyrene
5005 Naphthalene
6605 Pentachlorophenol
6615 Phenanthrene
6665 Pyrene

EPA 8270E

988

Semivolatile Organic compounds by
Gas Chromatography/Mass
Spectrometry (GC/MS)

5155 1,2,4-Trichlorobenzene

EPA 8270E

10242543

Semivolatile Organic compounds by
GC/MS

5155 1,2,4-Trichlorobenzene
4610 1,2-Dichlorobenzene
6155 1,2-Dinitrobenzene
4615 1,3-Dichlorobenzene



OREGON

Environmental Laboratory Accreditation Program

ORELAP Fields of Accreditation

ORELAP ID: WA100009

EPA CODE: WA01224

Certificate: WA100009 - 012



Fremont Analytical, Inc.

3600 Fremont Ave. N

Seattle, WA 98103

Issue Date: 5/10/2018 Expiration Date: 5/9/2019

As of 5/10/2018 this list supersedes all previous lists for this certificate number.

Solids

EPA 8270E

6160 1,3-Dinitrobenzene (1,3-DNB)
4620 1,4-Dichlorobenzene
6165 1,4-Dinitrobenzene
6380 1-Methylnaphthalene
4659 2,2-Oxybis(1-chloropropane)
6735 2,3,4,6-Tetrachlorophenol
6740 2,3,5,6-Tetrachlorophenol
6835 2,4,5-Trichlorophenol
6840 2,4,6-Trichlorophenol
6000 2,4-Dichlorophenol
6130 2,4-Dimethylphenol
6175 2,4-Dinitrophenol
6185 2,4-Dinitrotoluene (2,4-DNT)
6190 2,6-Dinitrotoluene (2,6-DNT)
5795 2-Chloronaphthalene
5800 2-Chlorophenol
6360 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)
5145 2-Methylaniline (o-Toluidine)
6385 2-Methylnaphthalene
6400 2-Methylphenol (o-Cresol)
6460 2-Nitroaniline
6490 2-Nitrophenol
6412 3 & 4 Methylphenol
5945 3,3'-Dichlorobenzidine
6355 3-Methylcholanthrene
6465 3-Nitroaniline
5660 4-Bromophenyl phenyl ether (BDE-3)
5700 4-Chloro-3-methylphenol
5745 4-Chloroaniline
5825 4-Chlorophenyl phenylether
6470 4-Nitroaniline
6500 4-Nitrophenol
5500 Acenaphthene
5505 Acenaphthylene
5510 Acetophenone
5545 Aniline
5555 Anthracene
5562 Azobenzene
5570 Benzaldehyde
5595 Benzidine
5575 Benzo(a)anthracene
5580 Benzo(a)pyrene
5590 Benzo(g,h,i)perylene



OREGON

Environmental Laboratory Accreditation Program

ORELAP Fields of Accreditation

ORELAP ID: WA100009

EPA CODE: WA01224

Certificate: WA100009 - 012



Fremont Analytical, Inc.

3600 Fremont Ave. N

Seattle, WA 98103

Issue Date: 5/10/2018 Expiration Date: 5/9/2019

As of 5/10/2018 this list supersedes all previous lists for this certificate number.

Solids

EPA 8270E

9309 Benzo(j)fluoranthene
5600 Benzo(k)fluoranthene
5585 Benzo[b]fluoranthene
5610 Benzoic acid
5630 Benzyl alcohol
5635 Benzyl chloride
5760 bis(2-Chloroethoxy)methane
5765 bis(2-Chloroethyl) ether
5780 bis(2-Chloroisopropyl) ether
6062 bis(2-Ethylhexyl)adipate
5670 Butyl benzyl phthalate
5680 Carbazole
5855 Chrysene
6065 Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)
9354 Dibenz(a, h) acridine
5900 Dibenz(a, j) acridine
5895 Dibenz(a,h) anthracene
9348 Dibenzo(a, h) pyrene
9351 Dibenzo(a, i) pyrene
5890 Dibenzo(a,e) pyrene
5905 Dibenzofuran
6070 Diethyl phthalate
6135 Dimethyl phthalate
5925 Di-n-butyl phthalate
6200 Di-n-octyl phthalate
6205 Diphenylamine
6265 Fluoranthene
6270 Fluorene
6275 Hexachlorobenzene
4835 Hexachlorobutadiene
6285 Hexachlorocyclopentadiene
4840 Hexachloroethane
6315 Indeno(1,2,3-cd) pyrene
5005 Naphthalene
5015 Nitrobenzene
6530 n-Nitrosodimethylamine
6545 n-Nitrosodi-n-propylamine
6535 n-Nitrosodiphenylamine
6605 Pentachlorophenol
6608 Perylene
6615 Phenanthrene
6625 Phenol
7985 Phorate



OREGON

Environmental Laboratory Accreditation Program

ORELAP Fields of Accreditation

ORELAP ID: WA100009

EPA CODE: WA01224

Certificate: WA100009 - 012



Fremont Analytical, Inc.

3600 Fremont Ave. N

Seattle, WA 98103

Issue Date: 5/10/2018 Expiration Date: 5/9/2019

As of 5/10/2018 this list supersedes all previous lists for this certificate number.

Solids

EPA 8270E

6665 Pyrene
5095 Pyridine

EPA 8270E SIM

989

Semivolatile Organic compounds by
Gas Chromatography/Mass
Spectrometry (GC/MS) SIM Mode

6380 1-Methylnaphthalene
5795 2-Chloronaphthalene
6385 2-Methylnaphthalene
5500 Acenaphthene
5505 Acenaphthylene
5555 Anthracene
5575 Benzo(a)anthracene
5580 Benzo(a)pyrene
5590 Benzo(g,h,i)perylene
5600 Benzo(k)fluoranthene
5585 Benzo[b]fluoranthene
5670 Butyl benzyl phthalate
5680 Carbazole
5855 Chrysene
6065 Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)
5895 Dibenz(a,h) anthracene
5905 Dibenzofuran
6070 Diethyl phthalate
6135 Dimethyl phthalate
5925 Di-n-butyl phthalate
6200 Di-n-octyl phthalate
6265 Fluoranthene
6270 Fluorene
6315 Indeno(1,2,3-cd) pyrene
5005 Naphthalene
6605 Pentachlorophenol
6615 Phenanthrene
6665 Pyrene

NWTPH-Dx

90018409

Oregon DEQ TPH Diesel Range

9369 Diesel range organics (DRO)
9499 Motor Oil
2050 Total Petroleum Hydrocarbons (TPH)

NWTPH-Gx

90018603

Oregon DEQ TPH Gasoline Range
Organics by GC/FID-PID Purge & Trap

9408 Gasoline range organics (GRO)

Appendix C

J.C. Boyle Hazardous Waste Inventory

Table C-1. Universal Waste Inventory

Material Description	Approximate Quantity
Mercury-Containing fluorescent light tubes (4' length)	68
Mercury-Containing fluorescent light tubes (6' length)	10
Mercury-Containing fluorescent light tubes (8' length)	8
Magnetic light ballasts	50
HID Lamps	39
Mercury-containing switches, controls, and recorders	None Observed

Table C-2. Non-RCRA Hazardous Waste Inventory

J.C. Boyle Development Asbestos and/or Lead-Based Materials		
Facility	Asbestos	Lead
Canal Headgate		✓
Communications Building	✓	✓
Fire Protection Building		✓
HazMat Shed	✓	✓
Intake Structure		✓
Outdoor Storage Area		✓
Penstock		✓
Powerhouse	✓	✓
Spillway		✓
Vehicle Storage Shed		✓
Warehouse	✓	✓
Office Warehouse	✓	
Residence 1	✓	
Residence 2	✓	
Assumed to be present underground throughout the J.C. Boyle Development	✓	

Table C-3. Characteristic Hazardous Waste Inventory

Hazardous Class	Common Name	Quantity	Container
Flammable and Combustible Liquids	Gasoline	500 Gallons	AST
Flammable and Combustible Liquids	Diesel Fuel No. 2	300 Gallons	AST
Flammable Gas	Acetylene	200 Cubic Feet	Cylinder
Non-Flammable Gases	Argon, Liquid	200 Cubic Feet	Cylinder
Flammable and Combustible Liquids	Gear Oil	20 Gallons	Plastic Drum
Flammable and Combustible Liquids	Hydraulic Oil	30 Gallons	Plastic Drum
Corrosives (Liquids and Solids)	lead Acid Batteries	10,840 Pounds	Glass Bottle or Jug
Flammable and Combustible Liquids	Used Oil	20 Gallons	Steel Drum
Flammable and Combustible Liquids	Paint	15 Gallons	Cans
Nonflammable Gases	Nitrogen	1,200 Cubic Feet	Cylinder
Flammable Gas	Propane	300 Gallons	AST

Appendix D

Oregon Spill Prevention, Control, and Countermeasure Plan



**Lower Klamath Project
FERC Project No. 14803**

**Oregon Spill Prevention,
Control, and
Countermeasure Plan**

**Klamath River Renewal Corporation
2001 Addison Street, Suite 317
Berkeley, CA 94704**

**Prepared by:
Knight Piésold
KRRP Project Office
4650 Business Center Drive
Fairfield, CA 94534**

December 2022

This page intentionally left blank.

Table of Contents

1.0	Introduction.....	1
1.1	Purpose of the Oregon Spill Prevention, Control, and Countermeasure Plan	1
1.2	Relationship to Other Management Plans	1
2.0	Spill Prevention, Control, and Countermeasure Plan Compliance	1
2.1	Designated Person	1
2.2	Management Approval and Resource Dedication	1
2.3	Professional Engineer Certification.....	1
2.4	Plan Location and Availability	2
2.5	Review, Certification, and Amendment.....	2
2.6	Facilities, Procedures, Methods, or Equipment Not Fully Operational	2
2.7	Cross-Reference with Regulations	2
2.8	Compliance with State and Local Applicable Requirements	2
2.9	Substantial Harm Facility	3
3.0	Existing Spill History	3
4.0	Facility Map	4
5.0	Oil Container Inventory.....	4
5.1	Existing Operational Equipment Oil Containers.....	4
5.2	Mobile or Portable Containers	5
5.3	Oil-Filled Manufacturing Equipment.....	6
5.4	Mobile Refuelers and Motive Power Containers.....	6
5.5	Bulk Storage Containers	6
5.6	Secondary Containment	9
6.0	Spill Notification and Reporting.....	9
6.1	Spill Notification.....	10
6.2	Spill Reporting.....	13
7.0	Spill Control and Procedures.....	14
7.1	Spill Control Measures.....	14
	7.1.1 Containment Structures and Equipment to Prevent Discharges for Existing Oil-Filled Equipment	17

7.1.2	Containment Structures and Equipment to Prevent Discharges for Construction Bulk Storage Oil Containers	26
7.2	Routine Handling of Products	27
7.3	Unloading Procedures	27
7.4	Facility Transfer Operations	27
7.4.1	Oil Transfer to Container	28
7.4.2	Oil Transfer to Equipment	28
7.4.3	Oil Drip Collection	29
7.4.4	Detailed Oil Transfer Procedures (Containers with >5000 Gallon Capacity)	29
8.0	Procedures for Spill Containment, Cleanup, and Reporting	30
8.1	Spill Containment and Cleanup Equipment	30
8.2	Spill Containment	30
8.3	Spill Control Equipment	31
8.4	Spill Clean-Up	32
8.5	Response to Discharge in Water	33
8.6	Spill Response during Off-Shifts, Weekends or Holidays	33
8.7	Recovered Spill Material Containment and Disposal	33
8.8	Methods of Disposal	33
8.9	Contact Information	34
9.0	Inspections, Testing, and Recordkeeping	35
9.1	Inspections and Tests	35
9.2	Periodic Inspections	36
9.2.1	Routine Inspections	36
9.2.2	Monthly Visual Inspections	36
9.2.3	Stormwater	37
9.3	Certified Inspection	37
9.4	Recordkeeping	38
10.0	Training and Awareness	39
10.1	SPCC Training	40
10.2	Toolbox Talks	40
10.3	Security	40
10.3.1	Main Facility	40

10.3.2 Spencer Creek	41
11.0 References	41

List of Tables

Table 3-1. J.C. Boyle Development Spill History	3
Table 5-1. Existing Oil-filled Operational Equipment	4
Table 5-2. Existing Bulk Storage Oil Containers	6
Table 5-3. Construction Bulk Storage Oil Containers	7
Table 6-1. Spill Verbal Notification and Reporting Requirements.....	12
Table 7-1. General Rule Requirements for Onshore Facilities	14
Table 7-2. Containment Structures and Equipment to Prevent Discharges for Existing Oil-filled Operational Equipment.....	18
Table 7-3. Containment Structures and Equipment to Prevent Discharges for Construction Bulk Storage Oil Containers	26
Table 8-1. Contact Information for the J.C. Boyle Development	34

Appendices

Appendix A	Quick Reference Information
Appendix B	Certification of the Applicability of the Substantial Harm Criteria
Appendix C	J.C. Boyle Facility Maps
Appendix D	Internal Spill Report Form and CEPC Form
Appendix E	Bulk Oil Container Inspection Checklist and Secondary Containment Retained Precipitation Discharge Log
Appendix F	Oil Spill Response Guide
Appendix G	Tank Truck Unloading Procedures
Appendix H	Oil Transfer Procedure Checklist
Appendix I	Monthly Inspection Checklist
Appendix J	Supplied Tank Information

Definition of Terms

Oil – Oil of any kind or in any form, including, but not limited to fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oil from seeds, nuts, fruits, or kernels; and other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse or oil mixed with wastes other than dredged spoil.

Discharge – Includes but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying or dumping of oil, but excludes discharges in compliance with a permit under Section 402 of the Clean Water Act (CWA). Includes discharges of oil in such quantities that the Administrator has determined may be harmful to the public health or welfare or the environment of the United States, including discharges of oil that: (a) violate applicable water quality standards; or (b) cause a film, sheen, or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.

Owner or Operator – Any person owning or operating an onshore facility.

Bulk Storage Container – Any container used to store oil. These containers are used for purposes including, but not limited to, the storage of oil prior to use, while being used, or prior to further distribution in commerce.

Storage Capacity – Of a container means the shell capacity of the container.

Reportable Spill – Federal – The discharge of any amount of oil, as defined above, (including an amount sufficient to cause a sheen on the water) to navigable waterway or to a location where the spilled oil may enter into a navigable waterway.

Reportable Spill – State –

- Discharges or threatened discharges of oil in marine waters
- Any spill or other release of one barrel (42 gallons) or more of petroleum products
- Discharges of any hazardous substances or sewage, into or on any waters of the state (wetlands, waterways, vernal pools, etc.)
- Discharges that may threaten or impact water quality
- Discharges of oil or petroleum products, into or on any waters of the State
- Hazardous liquid pipeline releases and every rupture, explosion, or fire involving a pipeline
- Any release causing off-site damage to public or private property
- An uncontrolled or unpermitted release that has escaped secondary containment, or extended into any sewers, stormwater conveyance systems, utility vaults and conduits, wetlands, waterways, or public roads, or was conveyed off-site

Navigable Waterway – Navigable water means the waters of the United States, including the territorial seas. The term includes: a) all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; b) interstate waters, including interstate wetlands; c) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, and wetlands, the degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters: 1) that are, or could be, used by interstate or foreign travelers for recreational or other purposes; 2) from which fish or shell fish are, or could be, taken and sold interstate or foreign commerce; 3) that are used or could be used for industrial purposes by industries in interstate commerce.

Waters of the State – Waters of the State has similar meaning to navigable waterways and includes: all navigable waterways and other waters including lakes, rivers, streams (including intermittent streams), ditches, mudflats, vernal pools, sand flats, and wetlands. Fully enclosed private irrigation ponds, sewage treatment ponds, stormwater retention ponds, landscape ponds, and similar private facilities that do not release to or have a physical connection to Water of the State are not considered to be Waters of the State.

1.0 Introduction

The Oregon Spill Prevention, Control, and Countermeasure Plan described herein is a subplan of the Waste Disposal and Hazardous Materials Management Plan that will be implemented as part of the Proposed Action for the Lower Klamath Project.

1.1 Purpose of the Oregon Spill Prevention, Control, and Countermeasure Plan

The purpose of the Oregon Spill Prevention, Control, and Countermeasure Plan is to describe the measures the Renewal Corporation will implement to prevent spills of oil from occurring as part of the Proposed Action. In addition, the Oregon Spill Prevention, Control, and Countermeasure Plan includes measures the Klamath River Renewal Corporation (Renewal Corporation) will implement to mitigate any spill should one occur. This plan was developed in accordance with 40 CFR Part 112.

1.2 Relationship to Other Management Plans

The Oregon Spill Prevention, Control, and Countermeasure Plan is supported by elements of the following management plans for effective implementation: Health and Safety Plan, Emergency Response Plan, and Fire Management Plan. So as not to duplicate information, elements from these other management plans are not repeated herein but are, where appropriate, referred to in this Oregon Spill Prevention, Control, and Countermeasure Plan.

2.0 Spill Prevention, Control, and Countermeasure Plan Compliance

2.1 Designated Person

The Renewal Corporation will designate a person responsible for implementing, maintaining, and complying with the Plan for the J.C. Boyle Development prior to the initiation of the Proposed Action.

2.2 Management Approval and Resource Dedication

The required management approval of this plan and resource dedication for implementing and maintaining this plan is provided in the cover pages herein.

2.3 Professional Engineer Certification

The required professional engineer's certification of this plan will be included prior to mobilization of the Proposed Action.

2.4 Plan Location and Availability

A certified copy of the plan will be maintained at the J.C. Boyle Development. The certified copy of the plan will be made available for all agency representative review at the J.C. Boyle Development during normal business hours (Monday through Friday, 8:00 a.m. to 5:00 p.m., with the exception of holidays).

2.5 Review, Certification, and Amendment

At a minimum, the Renewal Corporation will review this plan annually to update any contact information. Amendments to this plan will be implemented and documented as soon as possible, but no later than 6 months following preparation of the amendment. In addition, a signed statement will be included stating whether the plan will be amended. The Reviews and Amendments Record Log, document the reviews and amendments of this plan. The log also provides a record of the Professional Engineer Certifications of the plan.

The Renewal Corporation will amend this plan whenever there is a change in facility design, construction, operation, or maintenance that materially affects the facility's potential for the discharge of oil. The plan will be amended within 6 months and amendments will be fully implemented as soon as possible, but within the 6 months following preparation of the amendment. The plan will also be amended when new regulations are promulgated to ensure that the plan and its implementation are current. Professional Engineer's Certification of applicable amendments will be performed as necessary.

The plan will be updated by the Renewal Corporation if requested/notified by the Regional Administrator as the result of a reportable spill event. The Regional Administrator will provide the terms of proposed amendment. The plan will be amended within 30 days of receipt of notice.

2.6 Facilities, Procedures, Methods, or Equipment Not Fully Operational

The J.C. Boyle Development, with the associated procedures, methods, and equipment, are operational Monday through Saturday, 24 hours a day, except for holidays.

2.7 Cross-Reference with Regulations

This plan does not follow the exact order presented in 40 CFR 112. Section headings cite, where appropriate, the relevant section(s) of the plan regulations.

2.8 Compliance with State and Local Applicable Requirements

The Renewal Corporation's implementation of this plan will comply with state and local rules, as applicable.

2.9 Substantial Harm Facility

The Proposed Action is not considered a Substantial Harm Facility (see Appendix B).

3.0 Existing Spill History

Spill history for the J.C. Boyle Development is provided in Table 3-1 below. Since 2015, two documented spills have occurred at the J.C. Boyle Development on 2/2/2016 and 3/29/2017; no oil was discharged or released to the environment or navigable water during each spill. There has not been an oil discharge from this facility > 1000 gallon to navigable waterway and there have not been two or more oil discharges in the past 12 months from this facility.

Table 3-1. J.C. Boyle Development Spill History

OBSERVATION DATE	DATE CLOSED	AGENCY NOTIFICATION REQUIRED (YES/NO)	DESCRIPTION	CORRECTIVE ACTION
2/2/2016	2/2/2016	No	The nitrogen blanket failed on the transformer associated with the J.C. Boyle unit #2 generation plant which released approximately 2 ounces of transformer oil into the vault located below the transformer. One hundred percent of the transformer oil was contained within the transformer vault. No transformer oil was released to the environment or water.	The J.C. Boyle crew began immediate assessment of the incident area to prohibit the migration of transformer oil to the environment or water. The assessment revealed the nitrogen blanket regulator valve may have become frozen during the night or never was calibrated properly, which potentially allowed the nitrogen release. An estimated 2 ounces of transformer oil was released, as a result. This was observed as a sheen in the transformer vault. Oil absorbent pads were used to clean up the spilled material. No oil was discharged or released to the environment or water.
3/29/2017	3/29/2017	No	On March 29, 2017, for the J.C. Boyle Unit 2 turbine guide bearing low level alarm was	The cause of the oil spill was determined to be a ruptured pressure gage attached to the lube oil skid associated with the turbine guide bearing. A discharge of approximately

OBSERVATION DATE	DATE CLOSED	AGENCY NOTIFICATION REQUIRED (YES/NO)	DESCRIPTION	CORRECTIVE ACTION
			acknowledged by the Hydro Control Center.	one gallon of hydraulic oil was released into the plant sump. No oil was discharged from the sump into the Klamath River. PacifiCorp staff took corrective actions by applying oil soaks to the sump to absorb the oil and replace the oil pressure gage.

4.0 Facility Map

The J.C. Boyle Development is located on the Klamath River in Klamath County, Oregon, approximately 15 miles southwest of Keno. Maps of the facility are provided in Appendix C and show all existing containers on site subject to plan rules.

5.0 Oil Container Inventory

5.1 Existing Operational Equipment Oil Containers

Table 5-1 below includes a complete list of all existing electrical and operating equipment with oil storage capacity of 55 U.S. gallons or more at the J.C. Boyle Development. This table includes only aboveground containers as there are no completely buried tanks at the J.C. Boyle Development.

Table 5-1. Existing Oil-filled Operational Equipment

EQUIPMENT NUMBER	DESCRIPTION	TYPE OF OIL	CAPACITY
01	Penstock Intake Gate Hoist Gear Box	Gear Oil	83
02	Intake Gate Hydraulic System	Food Grade Hydraulic Oil	262
03	Steel Shed Oil Storage Drums (Approx. 2)	Misc. Oil Products	110
04	Convault Fuel Tank	Diesel Fuel	500
05	Convault Fuel Tank	Gasoline	1,000
06-01	Unit 1 Bearing Oil System - Lower Guide Bearing	DTE Heavy	118
06-02	Unit 1 Bearing Oil System - Thrust Bearing	DTE Heavy	282

EQUIPMENT NUMBER	DESCRIPTION	TYPE OF OIL	CAPACITY
07-01	Unit 2 Bearing Oil System - Lower Guide Bearing	DTE Heavy	118
07-02	Unit 2 Bearing Oil System - Thrust Bearing	DTE Heavy	282
08-01	Unit 1 Governor Oil Accumulator Tank	Hydraulic Oil	390
08-02	Unit 1 Governor Oil Reservoir	Hydraulic Oil	535
09-01	Unit 2 Governor Oil Accumulator Tank	Hydraulic Oil	390
09-02	Unit 2 Governor Oil Reservoir	Hydraulic Oil	535
10	Unit 1 Inlet Valve	Hydraulic Oil	85
11	Unit 2 Inlet Valve	Hydraulic Oil	85
12	Unit 1 Butterfly Valve HPU	Hydraulic Oil	106
13	Unit 2 Butterfly Valve HPU	Hydraulic Oil	106
14-01	Station Service Transformer #1	Transyl Oil	185
14-02	Station Service Transformer #2	Transyl Oil	185
15-01	Main Transformer - No. 3084	Transyl Oil	11,530
15-02	Main Transformer - No. 359763	Transyl Oil	9,152
16	Spare Transformer - No. 3083	Transyl Oil	11,530
17	Transformer, Pad mounted	Transyl Oil	185
	Total Existing Storage Capacity		37,694
	Facility Total Oil Storage Capacity		37,694

Notes:

Source: PacifiCorp Spill Prevention, Control, and Countermeasure Plan for the J.C. Boyle Facility (2019)

Aboveground storage containers that must be included when calculating total facility oil storage capacity include: tanks and mobile or portable containers; oil-filled operational equipment (e.g. transformers); other oil-filled equipment, such as flow-through process equipment. Exempt containers that are not included in the capacity calculation include: any container with a storage capacity of less than 55 gallons of oil; containers used exclusively for wastewater treatment; permanently closed containers; motive power containers; hot-mix asphalt containers; heating oil containers used solely at a single-family residence; and pesticide application equipment or related mix containers.

5.2 Mobile or Portable Containers

During the Proposed Action at the J.C. Boyle Development, there will be multiple plastic totes, steel drums, and flood lights and generators with belly tanks. The Renewal Corporation will utilize secondary containment and/or dedicated manpower, equipment, and clean-up materials for this equipment based on necessity determined by an in-field assessment of the spill risk associated with specific equipment location, oil contents/volume, use, and environmental surroundings in keeping with the typical failure mode as required by the general secondary

containment provisions in 40 CFR 112. At a minimum, the Renewal Corporation will maintain spill kits in the vicinity of such equipment.

5.3 Oil-Filled Manufacturing Equipment

The J.C. Boyle Development does not have any pieces of oil-filled manufacturing equipment with oil or oil-related fluid capacities of 55 gallons or more.

5.4 Mobile Refuelers and Motive Power Containers

The Renewal Corporation will utilize one mobile fuel/lube truck at the J.C. Boyle Development during the Proposed Action. Secondary containment or the dedication of manpower, equipment, and clean-up materials will be based on necessity determined by an in-field assessment of the spill risk associated with specific equipment location, oil contents/volume, use, and environmental surroundings in keeping with the typical failure mode.

Truck spill kits will be maintained on the mobile refuelers (fuel and lube trucks). The spill kits will include absorbent pads and booms for quick response to spills. The materials are in a strong zipper bag and require minimal storage space on the operating equipment.

5.5 Bulk Storage Containers

Bulk storage containers are defined as any container used to store oil. These containers will be used for purposes including, but not limited to, the storage of oil prior to use, while being used, or prior to further distribution in commerce. Oil-filled electrical, operating, or manufacturing equipment is not a bulk storage container.

The J.C. Boyle Development currently has a 500-gallon diesel fuel tank, a 1,000-gallon gasoline fuel tank and four 55-gallon oil storage drums as shown in Table 5-2 and with locations shown in Appendix C. Secondary containment is provided for all drum and tank storage.

Table 5-2. Existing Bulk Storage Oil Containers

CONTAINER DESCRIPTION	CONTAINER CONTENT	CONTAINER CAPACITY (GALLONS)	SECONDARY CONTAINMENT
Oil Storage Drums (Approx. 4)	Misc. Oil	220	Double Walled; inside Steel Container
Convault Fuel Tank	Gasoline	500	Steel tank isolated from concrete encasement for corrosion protection
Convault Fuel Tank	Gasoline	1,000	

Notes:

Source: PacifiCorp Spill Prevention, Control, and Countermeasure Plan for the J.C. Boyle Facility (2019)

Table 5-3 below includes an estimated list of construction-related bulk storage oil containers with capacity of 55 U.S. gallons or more that are anticipated to be located at vehicle staging areas at the J.C. Boyle Development during construction.

Table 5-3. Construction Bulk Storage Oil Containers

CONTAINER DESCRIPTION	CONTAINER CONTENT	CONTAINER CAPACITY (GALLONS)	SECONDARY CONTAINMENT
Steel AST	Used Oil	650	Double Walled; inside Steel Container
Steel AST	Gasoline	552	Double Walled, 110% containment Tank
Steel AST	CAT 15W-50 Engine Oil	55	Double walled; inside Steel Container
Steel AST	Mobil Hydraulic 10W	55	Double walled; inside Steel Container
Steel AST	50/50 Coolant/Antifreeze	55	Double walled; inside Steel Container
Steel AST	Mineral Spirits Material: 122374	55	Double walled; inside Steel Container
Steel AST	Lubricant 85-140	55	Double walled; inside Steel Container
Steel AST	Synthetic SAE 5W-40	55	Double walled; inside Steel Container
Steel AST	SAE 5W-30 Motor Oil	55	Double walled; inside Steel Container
Steel AST	EAL 224H AW	55	Double walled; inside Steel Container
Steel AST	Mobil DTE 10 Excel 46	55	Double walled; inside Steel Container
Steel AST	Mobil Grease XHP 322 MINE	55	Double walled; inside Steel Container
Steel AST	Misc. Oil	55	Double walled; inside Steel Container

CONTAINER DESCRIPTION	CONTAINER CONTENT	CONTAINER CAPACITY (GALLONS)	SECONDARY CONTAINMENT
Steel AST	Used Oil	55	Double walled; inside Steel Container
Steel AST	Mobil Delvac 1300 Super SAE 15W-40	280	Double Walled; inside Steel Container
Steel AST	Mobil Hydraulic SAE 10W	280	Double Walled; inside Steel Container
Steel AST	Mobil Delvac 1300 Super SAE 15W-40	280	Double Walled; inside Steel Container
Steel AST	Mobil Delvac Extended Life 50/50 Coolant/Antifreeze	280	Double Walled; inside Steel Container
Steel AST	Gear Lubricant SAE	280	Double Walled; inside Steel Container
Steel AST	Mobile Trans HD SAE 50W	280	Double Walled; inside Steel Container
Steel AST	Drive Train Oil SAE	280	Double Walled; inside Steel Container
Steel AST	Oil Storage Drum	220	Double Walled; inside Steel Container
Generator (DCA125SSIU4F)	Diesel Fuel	169	128% spill containment of on-board engine fluids
Light Plant (ALLMAND-ML II 8V)	Diesel Fuel	100	110% spill containment of on-board engine fluids
Tandem Axle	DT-30W Drive Train Oil	100	Spill Kit
Tandem Axle	Coolant/Antifreeze	100	Spill Kit
Generator (DCA125SSIU4F)	Diesel Fuel	79	119% spill containment of on-board engine fluids
Lube Truck	Mobil 85W/140	60	Spill Kit

Notes:

AST = Aboveground Storage Tank

Monthly inspections are required for all tanks identified above.

Spill Kits, where indicated as Secondary Containment, are comprised of absorbent pads and booms and are located on and/or nearby the listed tank.

5.6 Secondary Containment

Bulk storage container installations will be constructed so that a secondary means of containment is provided for the entire capacity of the largest single container plus sufficient freeboard to contain precipitation (no less than 110% of the largest container) in order to prevent a discharge of oil from reaching navigable waterway/waters of the state. For the purposes of this plan, a 24-hour duration, 25-year recurrence frequency storm event is considered for the allowance of precipitation volume in addition to secondary containment volume, when the oil storage location is outside without a roofed cover or are otherwise exposed to rainfall. For the J.C. Boyle Development, an average 24-hour duration, 25-year storm event of approximately 3.2 inches or 0.26 feet of accumulated precipitation (as per the National Oceanic and Atmospheric Administration) is utilized.

The remaining ASTs, steel drums, and plastic and steel totes at the Site will be stored in steel shipping containers (conexes), or are double-walled, or both. All the light towers and generators have built-in secondary containment and have spill kits nearby. In addition, the mobile refuelers all carry spill kits, which are comprised of absorbent pads and booms.

6.0 Spill Notification and Reporting

Depending upon the magnitude of a spill, the material spilled, and whether the spill is contained, spill reporting will require different courses of action. Whenever a spill occurs, the Renewal Corporation representative discovering the spill will, as soon as it is safely possible, notify their supervisor who will in turn notify the Spill Team Leader (or in their absence a designated alternate) as soon as possible (see below for Spill Team Leader contact information). If adequately trained and the conditions allow for safe access, the person who noticed the spill will then implement control and containment measures to try and minimize the extent of the spill.

The name and telephone number of the Spill Team Leader to be contacted in the event of a spill will be updated and identified prior to mobilization.

ROLE	TELEPHONE	CONTACTED
Primary Spill Team Leader	TBD	prior to initiation of construction activities
Secondary Spill Team Leader	TBD	prior to initiation of construction activities
Security Team (available 24 hours/seven days a week)	TBD	prior to initiation of construction activities

The Spill Team Leader or their alternate will gather the necessary information and notify the appropriate agencies as described below. The spill response procedures are described in detail

in Section 7.0. The remainder of this section presents the external notification and reporting procedures that should be followed in the event of a spill or release.

Notification and reporting procedures are often dictated by whether a Reportable Quantity of a substance has been released into the environment. A Reportable Quantity is a pre-established quantity of a specific chemical or material that, if released into the environment above the specified limit, will require reporting to the proper agencies. An owner or operator is required to report a release or discharge anytime there is an uncontained release or spill of a regulated chemical that exceeds its assigned Reportable Quantity. The Reportable Quantity for oil (defined in 40 CFR 112.2) is presented below:

The Reportable Quantity for the discharge of oil including crude oil into or upon navigable waters is any amount that causes a visible film or sheen upon the surface of the water.

6.1 Spill Notification

In the event of a material release or spill above its Reportable Quantity into the environment, the Renewal Corporation will give verbal notification as soon as knowledgeable to the National Response Center (NRC) at 800-424-8802; the Oregon's Office of Emergency Management (OEM) at 503-378-2911, Oregon Emergency Response System (OERS) at 800-452-0311 or 503-378-6377, ODEQ at 503-229-5696, and the Klamath County OEM at 541-851-3741.

Spill notification is also required for oil or oil-related product releases as follows:

- Discharges or threatened discharges of oil in marine waters.
- Any spill or other release of one barrel (42 gallons) or more of petroleum products at a tank facility.
- Discharges of any hazardous substances or sewage, into or on any waters of the state (wetlands, waterways, vernal pools, etc.).
- Discharges that may threaten or impact water quality.
- Discharges of oil or petroleum products, into or on any waters (wetlands, waterways, vernal pools, etc.) of the state.
- Hazardous liquid pipeline releases and every rupture, explosion, or fire involving a pipeline.
- The release caused off-site damage to public or private property.
- An uncontrolled or unpermitted release escaped secondary containment, or extended into any sewers, stormwater conveyance systems, utility vaults and conduits, wetlands, waterways, public roads, or was conveyed off-site.

If the release of oil is on land and is not discharged or threatening to discharge into State Waters; and (a) does not cause harm or threaten to cause harm to the public health and safety, the environment, or property; (b) is under 42 gallons; and (c) does not enter a public stormwater or sanitary sewer conveyance system, then no notification to the Emergency Response Agency (911), ODEQ or Oregon OEM is required.

Federal

Contact NRC (800-424-8802), if:

1. Oil is spilled into or upon surface water or an adjoining shoreline.
2. Oil has potential of reaching navigable waterways.
3. If the release poses a significant threat to persons outside the Site.
4. If there is a release of a hazardous substance exceeding the Reportable Quantity.

State

Notification to the State Emergency Response Commission (SERC) can be made by calling the Oregon Emergency Response System (OERS) at 800-452-0311 or 503-378-6377. Initial notification can be made by telephone, radio, or in person. Spills must also be reported to the NRC at 800-424-8802. In addition, notify all Local Emergency Planning Committees (LEPCs) whose planning district could be impacted by the release. Contact information for Klamath County LEPC is 541-851-3741.

The following will be included in the initial notification:

- For OERS, advise that a 304 release notification is being made.
- The substance name.
- Substance type.
- An estimate of the quantity released into the environment.
- The time and duration of the release.
- Whether the release occurred into air, water and/or land.
- Any known or anticipated acute or chronic health risks associated with the emergency, and where necessary, advice regarding medical attention for exposed individuals.
- Proper precautions, such as evacuation or sheltering in place.
- The name and telephone number of the contact person.

At a minimum, personnel will provide all required information as listed above. If the release occurs in an area bordering more than one state, notification may be required for the SERC and any LEPCs in the adjacent state. The Oregon Highway Patrol (911) must be notified for spills occurring on highways in the State of Oregon.

Local

The local Klamath County LEPC will be contacted at 541-851-3741, between 8:00 AM and 5:00 PM, Monday through Friday; 911 (all other hours) must also be notified.

In addition, the verbal notification to the NRC and Oregon OES will be made as soon as possible. Personnel will be prepared to relay as much of the information listed below that is known or can be estimated at the time of notification. The following items will be included in the

initial verbal notification (Please remember this is an initial report and estimates can be corrected in the follow-up written report.):

- Date and time of release or discharge.
- Exact address or location of spill or release.
- Name and phone number of the person reporting the release or discharge.
- Chemical name or identity of any substance(s) involved in the release or discharge.
- Estimate of the quantity (gallons or pounds) discharged into the environment.
- Description of what happened.
- Any injuries caused by the release or discharge.
- Measures taken or plans to abate, contain, and clean up the spill.
- Name of organizations that have also been contacted and their respective representative's name.
- Name of organizations that are on the site of the spill and respective representative's name.
- Source of release or discharge.
- Cause of release or discharge.
- Corrective measures taken.
- Corrective measures to be taken.

When a spill is reported to the appropriate agencies, the agencies will quickly determine from the information provided what additional measures need to be taken to control the spill. They will also identify and contact other parties that should be notified of the spill, such as local fire, police/sheriff, other applicable emergency services.

Table 6-1. Spill Verbal Notification and Reporting Requirements

TYPE OF SPILL	NOTIFICATION	REPORTING
Contained spill, does not impact environment, less than 42 gallons, does not go off-site, does not enter a storm drain or sanitary sewer collection or conveyance component, and does not reach a water of the State	Verbal notification not required	Reporting not required
Contained spill, does not impact environmental media, equal to or more than 42 gallons , does not go off-site, does not enter a storm drain or sanitary sewer collection or conveyance component, and does not reach a water of the State	Verbal notification to 911, ODEQ, Oregon OEM, and Regulatory Authority	Follow-up emergency report (Section 6.2)
Uncontained spill, does not impact the environment, below the Reportable Quantity and less than 42 gallons, does not go off-site, does not enter a storm	Verbal notification not required	Reporting not required

drain or sanitary sewer collection or conveyance component, and does not reach a water of the State

Uncontained spill, does not impact the environment, below the Reportable Quantity **but equal to or more than 42 gallons**, does not go off-site, does not enter a storm drain or sanitary sewer collection or conveyance component, and does not reach a Water of the State

Verbal notification to 911, ODEQ, Oregon OEM, and Regulatory Authority

Follow-up emergency report (Section 6.2)

Uncontained spill, does not impact the environment, below the Reportable Quantity, and **does enter a storm drain or sanitary sewer collection or conveyance component**

Verbal notification to 911, ODEQ, Oregon OEM, and Regulatory Authority

Reporting dependent on impacts and agency requirements

Note: “Spill” includes any spill, “release”, or “discharge”.

A more detailed description of spill notification procedures is provided in the Oil Spill Response Guide provided in Appendix F.

6.2 Spill Reporting

After a spill requiring agency notification (which also includes any “release” or “discharge”), the written follow-up emergency reporting will be completed as soon as practicable but must be submitted within 30 days of the spill to the Oregon OEM and SERC (also known as the Chemical Emergency Preparedness Commission [CEPC]). This follow-up emergency report is the Renewal Corporation’s opportunity to explain in its own words the circumstances and actions relating to the release of pollutants to the environment. The written emergency report will follow CEPC’s “304 Emergency Release Notification Written Follow-up Report” (<https://www.oregon.gov/osp/Docs/304FollowUpForm.pdf>). If any of the questions are not applicable to the incident, personnel will indicate N/A (not applicable) for that item. A copy of the Emergency 304 Emergency Release Notification Written Follow-up Report is presented in Appendix D. This information is required Per 40 CFR 355 (42 USC Ch. 116 §11004 et seq.).

If the spill is a second oil spill exceeding 42 gallons at the facility location within a 12-month period, or a spill of over 1,000 gallons that has reached a water of the State, a spill report and a copy of the J.C. Boyle Development’s Oregon Spill Prevention, Control, and Countermeasure Plan will be submitted to the U.S. EPA Regional Administrator and to CEPC/SERC within 60 days from the time of the discharge. The following response actions will be reported, should the above occur:

- Name of Site/Facility
- Name and title of person reporting
- Location of Site/Facility
- Maximum storage or handling capacity of the Site/Facility and normal daily throughput

- Corrective action and countermeasures undertaken, including a description of equipment repairs and replacement
- An adequate description of the Site/Facility and the surroundings, including maps, flow diagrams, and topographical maps, as necessary
- The cause of such discharge, including a failure analysis of the system or subsystem in which the failure occurred
- Additional preventative measures taken, or contemplated, to minimize the possibility of recurrence
- Other information as the U.S. EPA may reasonably require, pertinent to the Oregon Spill Prevention, Control, and Countermeasure Plan or discharge

Spill reports shall be submitted to the following:

Federal

US EPA – Region 10, M/S OCE-201
1200 6th Avenue, Suite 155
Seattle, WA 98101

State

Oregon State Emergency Response
Commission (SERC)
3565 Trelstad Ave SE
Salem, Oregon 97317-9614

A more detailed description of spill reporting procedures is provided in the Oil Spill Response Guide provided in Appendix F.

7.0 Spill Control and Procedures

7.1 Spill Control Measures

The J.C. Boyle Development is an onshore facility, and the Renewal Corporation will comply with general rule requirements as shown in Table 7-1.

Table 7-1. General Rule Requirements for Onshore Facilities

REQUIREMENTS		N/A
Drainage from diked storage areas is restrained by valves to prevent a discharge into the drainage system or facility effluent treatment system, except where facility systems are designed to control such discharge. Diked areas will be emptied by pumps or ejectors that must be manually activated after inspecting the condition of the accumulation to ensure no oil will be discharged. [§§112.8(b)(1) and 112.12(b)(1)]	<input type="checkbox"/>	<input type="checkbox"/>
Valves of manual, open-and-closed design will be used for the drainage of diked areas. [§§112.8(b)(2) and 112.12(b)(2)]	<input type="checkbox"/>	<input type="checkbox"/>
The containers at the facility are compatible with materials stored and conditions of storage such as pressure and temperature. [§§112.8(c)(1) and 112.12(c)(1)]	<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENTS		N/A
Secondary containment for the bulk storage containers (including mobile/portable oil storage containers) will have the capacity of the largest container plus additional capacity to contain precipitation. Mobile or portable oil storage containers are positioned to prevent a discharge as described in §112.1(b). [§112.6(a)(3)(ii)]	<input type="checkbox"/>	<input type="checkbox"/>
If uncontaminated rainwater from diked areas drains into a storm drain or open watercourse the following procedures will be implemented at the facility: [§§112.8(c)(3) and 112.12(c)(3)]		
Bypass valve will be normally sealed closed	<input type="checkbox"/>	<input type="checkbox"/>
Retained rainwater will be inspected to ensure that its presence will not cause a discharge to navigable waters or adjoining shorelines	<input type="checkbox"/>	<input type="checkbox"/>
Bypass valve will be opened and resealed under responsible supervision	<input type="checkbox"/>	<input type="checkbox"/>
Adequate records of drainage will be kept	<input type="checkbox"/>	<input type="checkbox"/>
For completely buried metallic tanks installed on or after January 10, 1974 at this facility [§§112.8(c)(4) and 112.12(c)(4)]:		
Tanks will have corrosion protection with coatings or cathodic protection compatible with local soil conditions.	<input type="checkbox"/>	<input type="checkbox"/>
Regular leak testing will be conducted.	<input type="checkbox"/>	<input type="checkbox"/>
For partially buried or bunkered metallic tanks [§112.8(c)(5) and §112.12(c)(5)]:		
Tanks will have corrosion protection with coatings or cathodic protection compatible with local soil conditions.	<input type="checkbox"/>	<input type="checkbox"/>
Each aboveground bulk container will be tested or inspected for integrity on a regular schedule and whenever material repairs are made. Scope and frequency of the inspections and inspector qualifications will be in accordance with industry standards. Container supports and foundations will be regularly inspected. [See Inspection Log and Schedule and Bulk Storage Container Inspection Schedule in Appendix E] [§112.8(c)(6) and §112.12(c)(6)(i)]	<input type="checkbox"/>	<input type="checkbox"/>
Outsides of bulk storage containers will be frequently inspected for signs of deterioration, discharges, or accumulation of oil inside diked areas. [See Inspection Log and Schedule in Appendix E] [§§112.8(c)(6) and 112.12(c)(6)]	<input type="checkbox"/>	<input type="checkbox"/>
For bulk storage containers that are subject to 21 CFR part 110 which are shop-fabricated, constructed of austenitic stainless steel, elevated and have no external insulation, formal visual inspection will be conducted on a regular schedule. Appropriate qualifications for personnel performing tests and inspections will be documented. [See Inspection Log and Schedule and Bulk Storage Container Inspection Schedule in Appendix E] [§112.12(c)(6)(ii)]	<input type="checkbox"/>	<input type="checkbox"/>

REQUIREMENTS		N/A
<p>Each container will be provided with a system or documented procedure to prevent overfills for the container. Describe:</p> <p>All personnel handling oil will be trained in securing master flow and drain valves as well as securing out-of-service and loading/unloading connection of oil pipelines. Container volume will always be measured physically with a stick and confirmed with visual inspection before filling. Only qualified oil-handling personnel will monitor level gauges during the filling of containers at the J.C. Boyle Development. Liquid level gauges are regularly tested and maintained to ensure proper operation. Container overfill prevention will be provided by engineering control and fuels pumps inside the fenced in compound will be instrumented</p>	<input type="checkbox"/>	<input type="checkbox"/>
Liquid level sensing devices will be regularly tested to ensure proper operation [See Inspection Log and Schedule in Appendix E]. <i>[§112.6(a)(3)(iii)]</i>	<input type="checkbox"/>	<input type="checkbox"/>
Visible discharges which result in a loss of oil from the container, including but not limited to seams, gaskets, piping, pumps, valves, rivets, and bolts will be promptly corrected and oil in diked areas is promptly removed. <i>[§§112.8(c)(10) and 112.12(c)(10)]</i>	<input type="checkbox"/>	<input type="checkbox"/>
Aboveground valves, piping, and appurtenances such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces will be inspected regularly. [See Inspection Log and Schedule in Appendix E] <i>[§§112.8(d)(4) and 112.12(d)(4)]</i>	<input type="checkbox"/>	<input type="checkbox"/>
Integrity and leak testing will be conducted on buried piping at the time of installation, modification, construction, relocation, or replacement. [See Inspection Log and Schedule in Appendix E] <i>[§§112.8(d)(4) and 112.12(d)(4)]</i>	<input type="checkbox"/>	<input type="checkbox"/>

In addition, the following requirements will be followed at the J.C. Boyle Development.

- Vehicle staging, cleaning, maintenance, refueling, and fuel storage will be performed at least 150 feet from waters of the state,
- All vehicles will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected in the vehicle staging will be repaired before the vehicle resumes operation,
- Before operations begin and as often as necessary during operation, equipment will be steam cleaned (or undergo an approved equivalent cleaning) until all visible external oil, grease, mud, and other visible contaminants are removed if the equipment will be used below the bank of a waterbody,
- All stationary power equipment (e.g., generators, cranes, stationary drilling equipment) operated within 150 feet of any waters of the state will have adequate suitable containment provided to prevent potential spills from entering any waters of the state,

- An adequate supply of materials (such as straw matting/bales, geotextiles, booms, diapers, and other absorbent materials) needed to contain spills will be maintained at the project construction site and deployed as necessary, and
- All equipment operated in state waters will use biodegradable hydraulic fluid. A maintenance log documenting equipment maintenance inspections and actions must be kept on-site and available upon request.

7.1.1 Containment Structures and Equipment to Prevent Discharges for Existing Oil-Filled Equipment

Table 7-2 below identifies the electrical, operating, or manufacturing equipment currently at the facility with the potential for an oil discharge; the potential mode of failure; the flow direction; and the secondary containment method and containment capacity that is provided.

Table 7-2. Containment Structures and Equipment to Prevent Discharges for Existing Oil-filled Operational Equipment

EQUIPMENT NUMBER/ DESCRIPTION	MAXIMUM VOLUME (GALLONS)	SECONDARY CONTAINMENT AND CAPACITY	DISCHARGE POTENTIAL/DIRECTION OF FLOW	SPILL RESPONSE EQUIPMENT PLACEMENT
01 Penstock Intake Gate Hoist Gear Box	83	Secondary Containment is provided by a constructed barrier. Containment capacity = 101 gallons.	Could discharge to the containment provided by the constructed barrier.	Pump free oil from containment to drums. Use sorbent from the spill response inventory to remove residual oil.
02 Intake Gate Hydraulic System	262	Secondary containment is provided by the containment pan on the skid and by the concrete block building that houses the skid. Food grade oil is used in the system to mitigate the effects of a spill from the hydraulic lines. Containment pan capacity = 34 gallons.	Could discharge into the containment pan of the skid, then onto the building floor and potentially onto the gravel outside the building.	Place sorbent booms and sorbent pads from the spill response inventory downstream of the equipment and in the flow path in places and manners that they block and absorb the flow of oil.
03 Steel Shed Oil Storage Drums (Approximately 2)	110	Secondary containment is provided by the spill pallets on which the drums sit. Containment capacity = 66 gallons.	Could discharge into the containment reservoir of the spill pallets.	Pump free oil from containment to drums. Use sorbent from the spill response inventory to remove residual oil.
04 Convault Fuel Tank	500	The container is double walled, which provides sufficient secondary containment.	Spills from the inner tank will be contained within the outer containment tank.	If the inner tank is breached, place sorbent booms and pads from the spill response inventory around the base of the tank until all product has been removed from both the main and containment tanks.

EQUIPMENT NUMBER/ DESCRIPTION	MAXIMUM VOLUME (GALLONS)	SECONDARY CONTAINMENT AND CAPACITY	DISCHARGE POTENTIAL/DIRECTION OF FLOW	SPILL RESPONSE EQUIPMENT PLACEMENT
05 Convault Fuel Tank	1000	The container is double walled, which provides sufficient secondary containment.	Spills from the inner tank will be contained within the outer containment tank. Oil could discharge into the yard gravel only if the outer containment tank were also breached.	If the Inner tank is breached, place sorbent booms and pads from the spill response inventory around the base of the tank until all product has been removed from both the main and containment tanks.
06-01 Unit 1 Bearing Oil System - Lower Guide Bearing	118	Secondary containment is provided by the concrete powerhouse sump located near the southwest corner of the plant and construction area. The sump is equipped with level controls and a programmable oil sensor that function to prevent oil discharges from the sump. Containment capacity = 3,830 gallons.	Could discharge onto the powerhouse floor, through floor plates or drains, and into the powerhouse sump.	Deploy sorbent booms and pads from the spill response inventory between the spill source and the powerhouse sump in such a manner as to absorb as much oil as possible and prevent it from flowing into the sump.
06-02 Unit 1 Bearing Oil System - Thrust Bearing	282	Secondary containment is provided by the concrete powerhouse sump located near the southwest corner of the plant and construction area. The sump is equipped with level controls and a programmable oil sensor that function to prevent oil discharges from the sump. Containment capacity = 3,830 gallons.	Could discharge onto the powerhouse floor, through floor plates or drains, and into the powerhouse sump.	Deploy sorbent booms and pads from the spill response inventory between the spill source and the powerhouse sump in such a manner as to absorb as much oil as possible and prevent it from flowing into the sump.

EQUIPMENT NUMBER/ DESCRIPTION	MAXIMUM VOLUME (GALLONS)	SECONDARY CONTAINMENT AND CAPACITY	DISCHARGE POTENTIAL/DIRECTION OF FLOW	SPILL RESPONSE EQUIPMENT PLACEMENT
07-01 Unit 2 Bearing Oil System - Lower Guide Bearing	118	Secondary containment is provided by the concrete powerhouse sump located near the southwest corner of the plant and construction area. The sump is equipped with level controls and a programmable oil sensor that function to prevent oil discharges from the sump. Containment capacity = 3,830 gallons.	Could discharge onto the powerhouse floor, through floor plates or drains, and into the powerhouse sump.	Deploy sorbent booms and pads from the spill response inventory between the spill source and the powerhouse sump in such a manner as to absorb as much oil as possible and prevent it from flowing into the sump.
07-02 Unit 2 Bearing Oil System - Thrust Bearing	282	Secondary containment is provided by the concrete powerhouse sump located near the southwest corner of the plant and construction area. The sump is equipped with level controls and a programmable oil sensor that function to prevent oil discharges from the sump. Containment capacity = 3,830 gallons.	Could discharge onto the powerhouse floor, through floor plates or drains, and into the powerhouse sump.	Deploy sorbent booms and pads from the spill response inventory between the spill source and the powerhouse sump in such a manner as to absorb as much oil as possible and prevent it from flowing into the sump.
08-01 Unit 1 Governor Oil Accumulator Tank	390	Secondary containment is provided by the concrete powerhouse sump located near the southwest corner of the plant and construction area. The sump is equipped with level controls and a programmable oil sensor that function to prevent oil discharges from the sump.	Could discharge onto the powerhouse floor, through floor plates or drains, and into the powerhouse sump.	Deploy sorbent booms and pads from the spill response inventory between the spill source and the powerhouse sump in such a manner as to absorb as much oil as possible and prevent it from flowing into the sump.

EQUIPMENT NUMBER/ DESCRIPTION	MAXIMUM VOLUME (GALLONS)	SECONDARY CONTAINMENT AND CAPACITY	DISCHARGE POTENTIAL/DIRECTION OF FLOW	SPILL RESPONSE EQUIPMENT PLACEMENT
		Containment capacity = 3,830 gallons.		
08-02 Unit 1 Governor Oil Reservoir	535	Secondary containment is provided by the concrete powerhouse sump located near the southwest corner of the plant and construction area. The sump is equipped with level controls and a programmable oil sensor that function to prevent oil discharges from the sump. Containment capacity = 3,830 gallons.	Could discharge onto the powerhouse floor, through floor plates or drains, and into the powerhouse sump.	Deploy sorbent booms and pads from the spill response inventory between the spill source and the powerhouse sump in such a manner as to absorb as much oil as possible and prevent it from flowing into the sump.
09-01 Unit 2 Governor Oil Accumulator Tank	390	Secondary containment is provided by the concrete powerhouse sump located near the southwest corner of the plant and construction area. The sump is equipped with level controls and a programmable oil sensor that function to prevent oil discharges from the sump. Containment capacity = 3,830 gallons.	Could discharge onto the powerhouse floor, through floor plates or drains, and into the powerhouse sump.	Deploy sorbent booms and pads from the spill response inventory between the spill source and the powerhouse sump in such a manner as to absorb as much oil as possible and prevent it from flowing into the sump.
09-02 Unit 2 Governor Oil Reservoir	535	Secondary containment is provided by the concrete powerhouse sump located near the southwest corner of the plant and construction area. The sump is equipped with level controls and a programmable oil	Could discharge onto the powerhouse floor, through floor plates or drains, and into the powerhouse sump.	Deploy sorbent booms and pads from the spill response inventory between the spill source and the powerhouse sump in such a manner as to absorb as much oil

EQUIPMENT NUMBER/ DESCRIPTION	MAXIMUM VOLUME (GALLONS)	SECONDARY CONTAINMENT AND CAPACITY	DISCHARGE POTENTIAL/DIRECTION OF FLOW	SPILL RESPONSE EQUIPMENT PLACEMENT
		sensor that function to prevent oil discharges from the sump. Containment capacity = 3,830 gallons.		as possible and prevent it from flowing into the sump.
10 Unit 1 Inlet Valve	85	Secondary containment is provided by the concrete powerhouse sump located near the southwest corner of the plant and construction area. The sump is equipped with level controls and a programmable oil sensor that function to prevent oil discharges from the sump. Containment capacity = 3,830 gallons.	Could discharge onto the powerhouse floor, through floor plates or drains, and into the powerhouse sump.	Deploy sorbent booms and pads from the spill response inventory between the spill source and the powerhouse sump in such a manner as to absorb as much oil as possible and prevent it from flowing into the sump.
11 Unit 2 Inlet Valve	85	Secondary containment is provided by the concrete powerhouse sump located near the southwest corner of the plant and construction area. The sump is equipped with level controls and a programmable oil sensor that function to prevent oil discharges from the sump. Containment capacity = 3,830 gallons.	Could discharge onto the powerhouse floor, through floor plates or drains, and into the powerhouse sump.	Deploy sorbent booms and pads from the spill response inventory between the spill source and the powerhouse sump in such a manner as to absorb as much oil as possible and prevent it from flowing into the sump.
12 Unit 1 Butterfly Valve HPU	106	Secondary containment is provided by the concrete powerhouse sump located near the southwest corner of the plant and construction area.	Could discharge onto the powerhouse floor, through floor plates or	Deploy sorbent booms and pads from the spill response inventory between the spill source and the powerhouse sump in such a

EQUIPMENT NUMBER/ DESCRIPTION	MAXIMUM VOLUME (GALLONS)	SECONDARY CONTAINMENT AND CAPACITY	DISCHARGE POTENTIAL/DIRECTION OF FLOW	SPILL RESPONSE EQUIPMENT PLACEMENT
		The sump is equipped with level controls and a programmable oil sensor that function to prevent oil discharges from the sump. Containment capacity = 3,830 gallons.	drains, and into the powerhouse sump.	manner as to absorb as much oil as possible and prevent it from flowing into the sump.
13 Unit 2 Butterfly Valve HPU	106	Secondary containment is provided by the concrete powerhouse sump located near the southwest corner of the plant and construction area. The sump is equipped with level controls and a programmable oil sensor that function to prevent oil discharges from the sump. Containment capacity = 3,830 gallons.	Could discharge onto the powerhouse floor, through floor plates or drains, and into the powerhouse sump.	Deploy sorbent booms and pads from the spill response inventory between the spill source and the powerhouse sump in such a manner as to absorb as much oil as possible and prevent it from flowing into the sump.
14-01 Station Service Transformer #1	185	No secondary containment is provided for the Station Service Transformers.	Could discharge onto the ground surrounding the service transformer, which is covered with gravel.	Place sorbent booms and sorbent pads from the spill response inventory downstream of the equipment and in the flow path in places and manners that they block and absorb the flow of oil.
14-02 Station Service Transformer #2	185	No secondary containment is provided for the Station Service Transformers.	Could discharge onto the ground surrounding the service transformer, which is covered with gravel.	Place sorbent booms and sorbent pads from the spill response inventory downstream of the equipment and in the flow path in

EQUIPMENT NUMBER/ DESCRIPTION	MAXIMUM VOLUME (GALLONS)	SECONDARY CONTAINMENT AND CAPACITY	DISCHARGE POTENTIAL/DIRECTION OF FLOW	SPILL RESPONSE EQUIPMENT PLACEMENT
				places and manners that they block and absorb the flow of oil.
15-01 Main Transformer - No. 3084	11,530	Secondary containment for the two main transformers is provided by the two curbed transformer pads that are connected by buried piping. The pads drain to a sump equipped with an oil sensor that shuts off the pump when oil is detected. Containment capacity = 17,851 gallons.	Could discharge onto the transformer pad and be contained by the concrete curb surrounding the transformer pad.	Place sorbent booms and sorbent pads from the spill response inventory downstream of the equipment and in the flow path in places and manners that they block and absorb the flow of oil.
15-02 Main Transformer - No. 359763	9,152	Secondary containment for the two main transformers is provided by the two curbed transformer pads that are connected by buried piping. The pads drain to a sump equipped with an oil sensor that shuts off the pump when oil is detected. Containment capacity = 17,851 gallons.	Could discharge onto the transformer pad and be contained by the concrete curb surrounding the transformer pad.	Place sorbent booms and sorbent pads from the spill response inventory downstream of the equipment and in the flow path in places and manners that they block and absorb the flow of oil.
16 Spare Transformer - No. 3083	11,530	Secondary containment is provided by the curbed transformer pad and an oil collection vault. The vault is equipped with an oil sensor that shuts down the pump when oil is detected. Containment capacity = 12,321 gallons.	Could discharge onto the transformer pad, through a drain line, and into the oil collection vault.	Place sorbent booms and sorbent pads from the spill response inventory downstream of the equipment and in the flow path in places and manners that they block and absorb the flow of oil.

EQUIPMENT NUMBER/ DESCRIPTION	MAXIMUM VOLUME (GALLONS)	SECONDARY CONTAINMENT AND CAPACITY	DISCHARGE POTENTIAL/DIRECTION OF FLOW	SPILL RESPONSE EQUIPMENT PLACEMENT
17 Transformer – Pad Mounted 3 Phase Transformer	185	No secondary containment is provided for the Station Service Transformers.	Could discharge onto the transformer pad, and surrounding gravel surface between the transformer and the fire/irrigation water pump house.	Place sorbent booms and sorbent pads from the spill response inventory downstream of the equipment and in the flow path in places and manners that they block and absorb the flow of oil.
18 Construction Diesel Storage Tank 1	1000	Double-walled tank on concrete pad	Could discharge from the fill nozzle downhill from the tank	Place sorbent booms and sorbent pads from the spill response inventory downstream of the equipment and in the flow path in places and manners that they block and absorb the flow of oil.
19 Construction Diesel Storage Tank 2	1000	Double-walled tank on concrete pad	Could discharge from the fill nozzle downhill from the tank	Place sorbent booms and sorbent pads from the spill response inventory downstream of the equipment and in the flow path in places and manners that they block and absorb the flow of oil.

Notes:

Source: PacifiCorp Spill Prevention, Control, and Countermeasure Plan for the J.C. Boyle Development (2019)

7.1.2 Containment Structures and Equipment to Prevent Discharges for Construction Bulk Storage Oil Containers

Table 7-3 identifies construction-related bulk storage oil containers at the facility with the potential for an oil discharge; the potential mode of failure; the flow direction; and the secondary containment method and containment capacity that is provided.

Table 7-3. Containment Structures and Equipment to Prevent Discharges for Construction Bulk Storage Oil Containers

CONTAINER DESCRIPTION	MAXIMUM VOLUME (GALLONS)	SECONDARY CONTAINMENT AND CAPACITY	DISCHARGE POTENTIAL/DIRECTION OF FLOW	SPILL RESPONSE EQUIPMENT PLACEMENT
Mobile Maintenance / Refueler Tank	60 to 100	Manpower and spill kits containing absorbent pads	Tank failure (collapse or puncture below product level). Direction of flow: ground surface	Manpower and spill kits containing absorbent pads and booms.
Generator Tank	79	Double walled tank, 119% spill containment system for on- board engine fluids	Tank failure (collapse or puncture below product level). Direction of flow: ground surface	Manpower and spill kits containing absorbent pads and booms.
Light Plant Tank	100	Double walled tank, 110% spill containment system for on- board engine fluids	Tank failure (collapse or puncture below product level). Direction of flow: ground surface	Manpower and spill kits containing absorbent pads and booms.
Generator Tank	169	Double walled tank, 128% spill containment system for on- board engine fluids	Tank failure (collapse or puncture below product level). Direction of flow: ground surface	Manpower and spill kits containing absorbent pads and booms.
AST	280 to 650	Double walled steel tank, inside steel container	Tank failure (collapse or puncture below product level). Direction of flow: ground surface	Manpower and spill kits containing absorbent pads and booms.
AST	5000	Double walled steel tank, attached steel containment pan	Tank failure (collapse or puncture below product level). Direction of flow: ground surface	Manpower and spill kits containing absorbent pads and booms.

Note:

AST = Aboveground Storage Tank
Transfer Operations

7.2 Routine Handling of Products

Good housekeeping practices will be implemented at the J.C. Boyle Development to maintain a clean and orderly facility, which will reduce the potential for chemicals or oil to come in contact with soils, stormwater, or groundwater. Site personnel will be instructed that all oil material storage and delivery areas must remain neat and orderly, and be free of any spills or debris, as per Kiewit standard operating procedures.

When equipment is in operation, employees will routinely inspect the equipment at least once per shift. Whenever an employee utilizes a fueling facility, obtains other oil products from a bulk oil container, or places waste oil in a bulk oil container, the employee will check for leaks and minor spills.

7.3 Unloading Procedures

Unloading procedures for tank trucks are detailed in the Tank Truck Unloading Procedures, a copy of which is provided in Appendix G. These procedures will be followed exactly or used as a guide for training purposes with the intent that site-specific conditions will dictate the exact methodology for:

- Control and clean-up of minor spills.
- Use of drip pans and absorbent pads and booms.
- Procedures for chocking and signing trucks.
- Ensuring closure, capping, and locking of fill valves after filling to prevent drips or leakage.
- The various steel drums, the lubricating oils and hydraulic fluid do not have any type of visual, mechanical, or electrical tank level indicators.
- All ASTs that are refilled have gauges that are used to ensure they are not overfilled. The fuel vendor's tank truck driver and a facility employee provide continuous observations during unloading of inbound oil or oil-related products; or outgoing spent or waste oil or oil-related products.
- All valves, pump controls, loading connections, and any other equipment, which may cause spillage of oil-related materials are secured, locked, and capped when in non-operating mode or in standby status.

7.4 Facility Transfer Operations

Oil transfer operations will mainly involve minor volumes within the J.C. Boyle Development from bulk-storage containers to the various pieces of equipment and vehicles including fueling vehicles.

There is no known buried oil transfer, distribution, or conveyance piping within the J.C. Boyle Development. All oil transfer, distribution, or conveyance piping is above ground.

All fuel or oil transfer points will be properly labeled, and all pipe supports will be properly designed to minimize abrasion and corrosion. All secondary containment drain valves that could discharge oil will be locked closed when the valves are in non-operating position. All unloading connections for oil transfers will be securely capped or blank-flanged when not in service, or when in standby service for any extended time. Aboveground piping is designed to ensure minimal hazards with vehicular traffic. No piping exists in areas with vehicular traffic.

All aboveground piping, valves, fittings, hoses, and appurtenances are regularly inspected for signs of leaks, corrosion, stress, or other signs indicative of a pending release point.

7.4.1 Oil Transfer to Container

General oil transfer procedures are provided in a checklist in Appendix H. This checklist will be used as a guide for training purposes for all new drivers with the intent that site-specific conditions will dictate the exact methodology to be used to ensure safe oil transfer.

When transferring oil from a storage container to a working container for placement in a service operation, the following spill procedures will be followed:

- Active drums used for oil distribution shall be supported on a spill basin, within an oil barrier, or atop oil-absorbing pads. The pads will not be completely spent, and only one active barrel of each chemical type will be opened at a time.
- When pouring oil from a distribution barrel, vessel, or container, oil-absorbing pads will be located below the container to catch any fluid spilled during the process.
- The container being used for the transfer of oil to field equipment will have self-closing lid, sealed lid, or valve which prevents oil being spilled in transit.
- An oil-absorbing pad will be placed below the inlet where oil is poured into the equipment or system. Pads will be replaced when three-quarters of the surface area is spent.
- Oil will not be transported in open pails and will not be allowed to fill greater than three-quarters or the capacity of the container; oil will also not be transported by hand in containers greater than five gallons.

7.4.2 Oil Transfer to Equipment

When transferring oil from an oil distributor to a plant and/or construction area by pump transfer, bulk container, or commercial drum, the following spill prevention procedures will be followed:

- When transferring petroleum products in bulk by pump, hose ends will be drained in an available drum both before and after transfer. When couplings are connected, oil-absorbing pads will be placed below couplings connections and couplings checked to ensure tight and proper connection.
- If there are leaking or dripping connections, joints will be repaired before transferring oil.
- When pouring oil from a distribution barrel, vessel, or container, oil-absorbing pads will be located below the container to catch any fluid spilled during the process.

7.4.3 Oil Drip Collection

When collecting oil drip vessels or container staged about a plant and/or construction area, the following preventative spill procedures will be followed:

- Oil will be collected before three-quarters of the container becomes full.
- Upon placing pads, cans, or containers, an oil pad will be staged below the container to absorb any oil that may condense on the container or inadvertently drip on the ground.
- Upon retrieving the container, only one container will be collected at a time and covered with an oil-absorbing pad during transport to the waste drum area.
- Upon pouring the used oil into collection drums, oil will be transferred to the drum using an appropriate funnel.
- Residual oil found on the outside of the drip container and atop the collection drum will be wiped clean before returning collection container back in service.

7.4.4 Detailed Oil Transfer Procedures (Containers with >5000 Gallon Capacity)

The 15-01 Main Transformer – No. 3084 has a 11,530-gallon capacity and the 15-02 Main Transformer – No. 359763 has a 9,152-gallon capacity (Table 7-2). Both are currently located at the J.C. Boyle Development and both transformers have secondary containment using two curbed transformer pads that are connected by buried piping. The pads drain to a sump equipped with an oil sensor that shuts off the pump when oil is detected. The secondary containment capacity is 17,851 gallons. In the event of a spill, spill response will involve placing sorbent booms and sorbent pads from the spill response inventory downstream of the equipment and in the flow path in places and manners that they block and absorb the flow of oil.

The 16 Spare Transformer - No. 3083 has a 11,530-gallon capacity (Table 7-2) and is currently at the J.C. Boyle Development. Similar to containment measures for the two main transformers described in the paragraph above, secondary containment will be provided by the curbed transformer pad and an oil collection vault. The vault is equipped with an oil sensor that shuts down the pump when oil is detected. The secondary containment capacity is 12,321 gallons. In the event of a spill, spill response will involve placing sorbent booms and sorbent pads from the spill response inventory downstream of the equipment and in the flow path in places and manners that they block and absorb the flow of oil.

A certified contractor will transfer the oil from all three transformers into a DOT-approved vessel and dispose of the oil off site. At a minimum, the oil transfer procedure will follow all protocols described in Section 7.4.1.

8.0 Procedures for Spill Containment, Cleanup, and Reporting

8.1 Spill Containment and Cleanup Equipment

The J.C. Boyle Development maintains an adequate supply of spill control equipment to respond to spills. In the event of a release, the J.C. Boyle Development has trained personnel and on-site equipment available to contain and clean-up any minor oil spills. The following response equipment will be maintained at the various bulk oil storage container areas within the J.C. Boyle Development and staging areas and will be available in the event of a spill of a regulated material:

- Spill kits (absorbent pads, pillows, and booms)
- Bulk absorbent material
- Shovels and pumps
- Mops and drums

8.2 Spill Containment

The facility employs a variety of countermeasures to contain spills once they occur. The secondary containment features around all bulk oil storage containers will prevent a spill from happening.

NOTE: TYPICAL RESPONSE IS LIMITED TO RECOGNITION, DIVERTING, AND MITIGATING SPREAD OF A SPILL, UNLESS RESPONDING KIEWIT STAFF HAVE COMPLETED AND ARE CURRENT WITH THE REQUIRED HAZWOPER AND SPILL RESPONSE TRAINING, AND ARE UNDER THE DIRECTION AND SUPERVISION OF THE SPILL TEAM LEADER.

If a minor oil product spill occurs in a secondary containment area, safety and protection of human health is the first priority. All pumps or valves will be immediately shut-off or closed, and all transfer operations will be stopped if safe to do so. If safe access can be afforded, then the supply and source of the spill will be determined, and the leak will be stopped. If a small release (typically less than 5 gallons) occurs, the spilled oil material will be removed with absorbent materials (pads, pillows, and bulk material) and the spent absorbent materials will be placed in a properly labeled, Department of Transportation (DOT) approved container for transport off-site for disposal purposes. If a larger (typically greater than 5 gallons of oil product) release occurs within the secondary containment area, the spilled oil product will be recovered with pumps or a vacuum truck. The spill cleanup materials will be properly discharged into DOT-approved and properly labeled drums or left in the vacuum truck; and transported and disposed/recycled off-site at a permitted facility. Residual oil product will be collected with absorbent materials (pads, pillows, booms, or bulk material) to the extent practicable. No “wash-down” of spilled oil materials will occur.

Should a spill escape the secondary containment structure, the following general procedures are followed:

- Safety and protection of human health is the first priority.
- Immediately shut off all pumps or close appropriate valves and stop all transfer operations if safe to do so.
- Determine the supply and source of the spill and stop the leak, if possible and is safe to do so.
- Contact emergency response personnel.
- Warn people in the area if there is a danger to life or property; warn all facility personnel, guests, and visitors that may be in the area.
- Assist any injured people.
- Provide physical barrier to prevent unauthorized access to spill.
- Control and contain the spilled material, limiting the extent of the spill, especially if there is a danger of it entering an on- or off-site stormwater or sanitary sewer conveyance system, or waterway; or spreading off-site.
- Utilize absorbent pads, blankets, booms, spill dikes, absorbent bulk material berms or soil berms as needed to divert and contain the flow and keep the spilled oil material from going off-site or into a storm drain feature or surface water body, or into a sanitary sewer facility.
- Cover and contain as feasible and divert flow around and away from any storm drain collection features (drop inlets, area drains, curb inlets, catch basins, ditches, etc.), limiting the extent of the spill, especially if there is a danger of it entering an off-site stormwater or sanitary sewer conveyance system, or waterway.
- Recover and remove the spilled material as quickly as possible. For small quantities, utilize absorbent materials; for larger quantities, the Kiewit Project Director will decide whether to use portable pumps and waste containers/tanks to collect the spill; or to contract with outside spill response contractor. The recovered material must be properly contained (in containers compatible with materials recovered) and stored until disposed of by an acceptable method in accordance with all local, state and federal requirements.
- Remove residual material through the use of absorbent materials. When saturated, the absorbent material must be properly containerized (in containers compatible with materials recovered), stored, and disposed of, by an acceptable method in accordance with all local, state, and federal requirements.
- These procedures vary depending on the size and location of the spill. Employees who have received Spill Prevention, Control, and Countermeasure Plan training are qualified and authorized to undertake response and countermeasures to minor oil spills.

8.3 Spill Control Equipment

The J.C. Boyle Development maintains an adequate supply of spill control equipment to respond to spills. In the event of a release, the J.C. Boyle Development has trained personnel and on-site equipment available to contain and clean-up any minor oil spills. On-site equipment and materials include PPE, spill kits, and absorbent materials such as booms, pads, and bulk absorbent material.

The J.C. Boyle Development also has a limited amount of small-scale heavy equipment that, if properly trained employees are available, will be used to assist in spill control and containment, (i.e., the creation of temporary berms, boom/pad layout, temporary plugging, or redirection of stormwater run-off, etc.).

8.4 Spill Clean-Up

The facility employs a variety of countermeasures to handle spills once they occur. These procedures vary depending on the size and location of the spill. The following procedures should be implemented in the case of small spills retained within containment areas, if safe to do so.

- Absorb spilled materials using loose absorbent materials, pads, blankets, or pillows for low volume releases; a contracted vacuum truck will be utilized for larger oil spill or oily water recovery. Non-liquid materials will be picked up with non-sparking shovels or with brooms and dust pans.
- The recovered oil product, oily water, and/or spent absorbent materials will be placed in DOT-approved containers and will be disposed of off-site in accordance with applicable federal and state regulations. Container liners will be used as required.
- The Kiewit Project Director and/or Project Environmental Coordinator will be consulted to ensure proper labeling of drums and disposal techniques and procedures.
- Properly label all drums for temporary on-site storage and off-site disposal.
- Clean spill control equipment and return them to proper storage space.
- Clean and/or restore spill surface as needed.
- As applicable, retain all wash and rinse water and transfer to appropriate on-site location for temporary storage management according to state and federal regulations; or permitted on-site treatment and/or disposal facility.
- Establish and maintain an exclusion zone in the area of the spill to prevent unauthorized contact with spilled material, clean-up materials, and to avoid impacts to the public and to other Kiewit employees and guests during the spill response and clean-up period.
- Determine spill reporting requirements and contact the appropriate agencies.
- File a completed Spill Release Report Form with the ODEQ (e.g., Oregon Emergency Response System) in Appendix D, any forms from the National Response Center and document the spill internally with the Renewal Corporation.

Large spills or spills that have the potential to enter the environment may require the response of an outside spill response contractor. In addition, per the Clean Water Act Section 401 certification for the KRRRC License Surrender and Removal of the Lower Klamath Project, if a release of petroleum products, chemicals, or other materials results in distressed or dying fish, personnel will immediately do the following: cease operations; take appropriate corrective measures to prevent further environmental damage; collect fish specimens and water samples; and notify ODEQ and Oregon Department of Fish and Wildlife.

8.5 Response to Discharge in Water

A discharge to water is defined as a discharge of any amount of oil to any portion of the Klamath River, its tributaries, associated reservoirs, or other regulated bodies of water. In general, cleanup of a discharge to water is beyond facility personnel capability. This is because discharges to water spread quickly over the surface of still water and downstream in fast water, require specialized equipment and training to clean up, and involve actions that pose unacceptable safety risk to untrained facility personnel. In the event of a discharge to water, the following guidelines apply:

- Assess the situation for safety.
- If it is safely possible, attempt to stop the source of the discharge.
- Notify the Kiewit Project Director and Primary Spill Team Leader.
- Notify all local, state, and federal agencies (see Table 8-1).
- Contact spill response contractors as required (see Table 8-1).
- Take actions to contain and clean portions of the spill only if it can be completed safely and in accordance with training received.
- Deploy absorbent booms in still or slow-moving water, as appropriate, to contain absorb, and/or divert oil spilled into water.
- Agency notification is required and will be completed by 24/7 on-call compliance duty person.

8.6 Spill Response during Off-Shifts, Weekends or Holidays

For spills occurring during off-shifts, weekends, and holidays, notify the Spill Team Leader immediately.

8.7 Recovered Spill Material Containment and Disposal

The following response equipment will be maintained at the various bulk oil storage container areas within the J.C. Boyle Development and will be available in the event of a spill of a regulated material:

- Spill kits (absorbent pads, pillows, and booms)
- Bulk absorbent material
- Shovels and pumps
- Mops and drums

8.8 Methods of Disposal

Wastes resulting from all discharge response efforts will be containerized in impervious bags, drums, or buckets. The Kiewit Project Director and Primary Spill Team Leader will coordinate with a compliance technician to characterize the waste for proper disposal and ensure that it is removed from the facility and properly disposed. All waste will be disposed of by a licensed waste hauler in accordance with local and state regulations.

8.9 Contact Information

The J.C. Boyle Development is located at:

John C. Boyle Hydroelectric Development
26020 Highway 66
Keno, OR 97627

Table 8-1 below provides some contact information for the J.C. Boyle Development including emergency response reporting organizations, key facility personnel, and local emergency departments. Additional contact information will be updated and identified prior to mobilization.

Table 8-1. Contact Information for the J.C. Boyle Development

CONTACT ORGANIZATION / PERSON	TELEPHONE NUMBER
National Response Center (NRC)	1-800-424-8802
Cleanup Contractor(s) NWFF	1-800-942-4614
KEY FACILITY PERSONNEL	
Designated Person Accountable for Discharge Prevention: Kiewit Project Director	Office: TBD
	Emergency: TBD
Primary Spill Team Leader	Office: TBD
	Emergency: TBD
Secondary Spill Team Leader	Office: TBD
	Emergency: TBD
Security Team	Office: TBD
	Emergency: TBD
STATE OIL POLLUTION CONTROL AGENCIES	
Oregon Office of Emergency Management (OEM)	503-378-2911
Oregon Emergency Response System (OERS) / State Emergency Response Commission (SERC)	800-452-0311 or 503-378-6377
Oregon Department of Environmental Quality	503-229-5696

OTHER STATE AND FEDERAL AGENCIES	
National Response Center (NRC)	800-424-8802
US EPA, 24-Hour Environmental Emergencies	1-800-300-2193
Oregon Highway Patrol	911
LOCAL AGENCIES	
Klamath County Office of Emergency Management	541-851-3741
Keno Fire Department	911 or 541-884-5844
Klamath Falls Police Department	911 or 541-883-5336
Sky Lakes Medical Center	541-882-6311
OTHER CONTACT REFERENCES (E.G., DOWNSTREAM WATER INTAKES OR NEIGHBORING FACILITIES)	
TBD	TBD

9.0 Inspections, Testing, and Recordkeeping

9.1 Inspections and Tests

Uniform inspection procedures have been established and will continue during the implementation of the Proposed Action at the J.C. Boyle Development to help in preventing spills; prevent and address leakage; and to maintain the integrity of the bulk oil containers (ASTs, drums, barrels, etc.); and the associated containment measures.

Oil storage containers are subject to specific inspection procedures. Each aboveground bulk storage container will be visually inspected and tested for integrity monthly, and whenever material repairs are made. The frequency and type of testing will take into account the size and design of the container, (e.g., floating roof, skid-mounted, elevated, or partially buried). The container's supports and foundations will be inspected, and the outside of the container will be inspected frequently for signs of deterioration, discharge, or accumulation of oil on the outside of the container or inside diked areas. Records of inspections and testing will be kept in a secure, dry place for at least three (3) years.

There are single-wall shop-fabricated steel tanks and/or drum type bulk oil storage containers at the J.C. Boyle Development covered under this Oregon Spill Prevention, Control, and Countermeasure Plan. Specific inspection procedures are presented below for these bulk

storage containers. For any oil-filled equipment, the same type of inspections and inspection frequencies will be followed as listed below for the oil-filled containers.

The ASTs will be inspected in accordance with Steel Tank Institute's Standard for the Inspection of Aboveground Storage Tanks, SP001, issued January 2018, 6th edition. This standard applies to aboveground storage tanks (ASTs) storing stable, flammable, and combustible liquids at atmospheric pressure with a specific gravity less than approximately 1.0.

The STI SP001 standard consists of two types of inspections that will be conducted at the facility. The first type of inspection is called a Periodic Inspection that is conducted by qualified personnel. The second type of inspection is a Certified Inspection normally conducted by a certified inspector, but through a provision in STI SP001 for the types and sized of bulk oil storage containers and oil-filled equipment at the J.C. Boyle Development, will be conducted by trained and qualified personnel.

9.2 Periodic Inspections

The periodic inspection program will consist of routine and monthly visual inspections of each oil- containing AST, drum, or equipment. The inspections will be performed by the Spill Team Leader, or their designee. Inspections will be documented using an inspection checklist which will be located on Site (Section 9.2.2).

9.2.1 Routine Inspections

ASTs, equipment reservoirs, oil-filled equipment, and drums and any associated above-grade oil product distribution lines, dispensing equipment, valves, or dispensing hoses will be visually inspected during normal business hours by operating personnel during the normal course of business.

Operators will look for signs of equipment deterioration and/or leaks. Leaks from ASTs, equipment reservoirs, oil-filled equipment, drums, associated piping or hoses, valves, or caps will be investigated, and the source problem will be promptly corrected.

All oil or oil-related product valves, flanges, hoses, and piping are aboveground, and will be regularly examined by operating personnel. Documentation of routine inspections will not be required but suggested when issues or problems are found as per the Kiewit Daily Visual Inspection (DVI) program.

9.2.2 Monthly Visual Inspections

Items on the monthly inspection checklist sheet include: ASTs, measurement devices, equipment reservoirs, oil-filled equipment, drums, tank foundations and supports, pipelines, hoses, pumps, valves, roadways, containment, portable equipment, machinery and ladders, fire extinguishers, safety equipment and stations, signs, placards, and storm drainage facilities. All container supports and foundations will be inspected, and the outside of the container will be

inspected for signs of deterioration, discharge, or accumulation of oil on the outside of the container or inside secondary containment areas.

An example monthly oil storage container visual inspection checklist is presented in Appendix I and a more specific checklist, designed to match up with Kiewit's KieTrac program, is provided in Appendix D. A monthly inspection checklist will be completed via KieTrac and signed by the appropriate facility supervisor or manager, and any required remedial action will be implemented by the appropriate facility supervisor or manager to minimize any spill risk and facilitate spill prevention. Copies of the completed monthly oil storage container visual inspection checklists will be stored electronically in KieTrac and accessible at the J.C. Boyle Development for a period of at least three (3) years.

Facility personnel, who are familiar with the facility operations involving oil or oil-related product use at the J.C. Boyle Development, and this Oregon Spill Prevention, Control, and Countermeasure Plan and its related policies, will perform the monthly visual inspections. It is the responsibility of the Spill Team Leader, or their designee, to routinely inspect all facilities which could contribute to a pollution incident, with the express intent of detecting and correcting weaknesses or suspected problems before spills, releases, or potential failure could occur.

9.2.3 Stormwater

Inside the outdoor secondary containment area(s) of the outdoor drum storage areas (palletized secondary containment); rainwater can accumulate in the concrete-walled and in the palletized secondary containment. After a major storm event, qualified personnel will inspect the accumulated rainwater in secondary containment structures for signs of oil impact (sheen, emulsion, film, etc.). If no oil impacts are observed, the accumulated rainwater in the secondary containment structure will be allowed to drain either by gravity drainage; or will be removed by the utilization of a portable submersible sump pump under direct responsible supervision, as applicable. If the accumulated rainwater demonstrates oil impact, then alternative arrangements will be made to remove, contain, and transport off-site the impacted accumulated rainwater following state and federal requirements.

9.3 Certified Inspection

The certified inspection will be conducted on the steel tanks in accordance with the frequency specified in the standard by a qualified tank inspector. A certified inspection will not be performed on the bulk oil storage drums. A qualified tank inspector is a person who is certified by one or more of the following sources:

- American Petroleum Institute (API) Certified AST Inspector; API AST Inspector Certification Program, 1220 L Street NW, Washington, D.C. 20005.
- Steel Tank Institute (STI) trained and certified inspectors who have received their training by STI; STI, 570 Oakwood Road, Lake Zurich, IL 60047.

The STI SP001 standard will be utilized for the "certified" inspection of the ASTs at the J.C. Boyle Development. The STI SP001 standard specifies tank inspection requirements for: 1)

formal external inspection guidelines (horizontal ASTs, vertical or rectangular ASTs, and insulated ASTs), and 2) formal internal inspection guidelines. Inspections will be recorded on a Certified Tank Inspection Report to be provided by the inspector.

In accordance with SP001, ASTs with a capacity of less than or equal to 5,000 gallons will only have periodic external visual inspections. The SP001 standard requires that the owner or their designee perform and document a periodic, visual, non-destructive inspection of each AST at least monthly, in accordance with the provisions and the checklists provided in SP001. This inspection will be performed by a person that is knowledgeable of the storage facility operations, the AST and its associated components, and the characteristics of the liquid stored, and meets the qualifications stipulated in SP001. The routine inspections focus specifically on detecting any change in conditions or signs of product leakage from the AST, piping system, and appurtenances. In accordance with inspection procedures outlined in this Oregon Spill Prevention, Control, and Countermeasure Plan, if signs of leakage or deterioration from the AST are observed by facility personnel, they will be reported immediately to the Spill Team Leader who will then contract to have the AST inspected by a tank inspector (certified by API or STI) to assess its suitability for continued service, according to SP001.

Facility personnel who conduct the monthly inspections of the bulk oil storage containers will be qualified in accordance with SP001. The AST's physical configuration, combined with monthly inspections, ensures that any small leak that could develop in the tank shell will be detected before it can become significant, escape secondary containment, and reach the environment. This approach provides equivalent environmental protection to the non-destructive shell evaluation component of integrity testing required under 40 CFR 112.8(c)(6) since it provides an appropriate and effective means of assessing the condition of the tank and its suitability for continued service.

Thus, in lieu of physical integrity testing, this conformance with SP001 provides an equivalent environmental protection to prevent a discharge, as described in 40 CFR 112.1(b).

9.4 Recordkeeping

Reviewed and signed bulk oil storage container and containment inspection checklists and test records will be kept on file in a dry, weather resistant area at the J.C. Boyle Development for at least three (3) years. The completed inspection checklists will be considered part of this SPCC Plan. As noted in the completed inspection checklist and test records, appropriate remedial or corrective action will be implemented as necessary to facilitate spill prevention and countermeasures.

Documentation of all training pertaining to this SPCC plan will be maintained by the manager for at least three (3) years. Documentation will additionally be stored on the Kiewit Project SharePoint website.

10.0 Training and Awareness

Kiewit has an extensive training program for all management and operations personnel at the Site. New employees will receive introductory training on environmental, health, and safety issues during the new employee orientation. Since all operations at the J.C. Boyle Development are conducted under Kiewit's standard operating procedures (SOP), there will be an extensive training program for the employees understanding and utilization of the SOPs.

In addition to equipment operation and manual tasks, site personnel will receive training in health, safety, and environmental issues at the site including the following topics:

- Site Hazards
- Hazard Communication
- General Safety Rules
- Emergency Action and Fire Prevention Plan
- Hazardous Materials Storage and Handling Plan
- Personal Protective Equipment applicable to their work tasks
- Safety Permits
- Emergency Response
- Environmental Awareness
- Spill Hazard Recognition and Reporting
- Spill Reporting
- Waste Minimization
- Hazardous Waste Handling

Annual refresher training will be provided to all applicable employees to ensure understanding of the Spill Prevention, Control, and Countermeasure Plan for the J.C. Boyle Development. Annual refreshers will also include a discharge briefing section including the following topics: known discharges, failures, and recently developed precautionary, control, and countermeasures. Also, periodic reviews of existing requirements and briefings on new requirements will be provided at monthly safety meetings.

Additional training on SPCC Plan Amendments will be completed as necessary. The items to be covered in these training sessions will include, but not necessarily be limited to, the following:

- Operation and maintenance of equipment to prevent discharges.
- Discharge procedure protocols including notification requirements (internal and external); control and countermeasure implementation; communications and alarm systems; response procedures to various types of spills; and location and use of spill response equipment.
- Applicable pollution control laws, rules, and regulations.
- General facility operations.
- Contents of this SPCC Plan.

- Highlights and descriptions of known discharges or failures, malfunctioning components, and any recently developed precautionary measures.
- Reporting requirements to regulatory authorities.

Documentation of all employee training is kept in the main Kiewit office and on the Kiewit SharePoint website.

10.1 SPCC Training

Personnel responsible for handling oil will be trained in the operation and maintenance of equipment to prevent discharges including discharge procedure protocols, applicable pollution control laws, rules, and regulations, and general facility operations. Discharge prevention briefings will be conducted for oil-handling personnel annually to assure adequate understanding of the SPCC Plan for the J.C. Boyle Development. Such briefings will highlight and describe past reportable discharges or failures, malfunctioning components, and any recently developed precautionary measures.

10.2 Toolbox Talks

Toolbox talks will cover discharge prevention briefings. These talks will be conducted for oil-handling personnel annually to assure adequate understanding of the SPCC Plan for the J.C. Boyle Development. Talks will highlight and describe past reportable discharges or failures, malfunctioning components, and any recently developed precautionary measures.

10.3 Security

10.3.1 Main Facility

Security measures for oil handling, processing, and storage areas will be implemented always at the J.C. Boyle Development. Preventing unauthorized access will be conducted via security lighting, fences, and the guard shack. Success in security measures will stem from preventative measures and training to prevent unauthorized access to oil handling, processing, and storage areas. The J.C. Boyle Development is protected on all sides by a chain link fence with barbed wire. Road access to the facility will be controlled by manned guard shacks with pipe gates and unmanned pipe gates as shown in Appendix C.

The fuel pump storage area will be securely locked when the facility is closed or in standby status for an extended period of time. All master flow and drain valves in the fuel pump storage area will be locked in the closed position when the facility is closed. The diesel and gasoline fuel dispensing pumps are air-operated and outside of construction hours and during non-standby status, the air power to these pumps will be cut off to prevent unauthorized use. Loading and unloading connections for the diesel and gasoline tanks will be secured with lockable caps on the fill port tank tops. The fill ports on these fuel tanks will be unlocked only for refilling or inspection purposes and will be locked when tanks are not in service or are in standby status for an extended period.

The fuel pump storage area, waste storage area, and all SPCC container and tank storage areas will have adequate lighting to allow personnel to identify spills or leaks and to minimize the risk of discharges occurring through acts of vandalism.

After hours, gates will be closed and locked. Access to the site during non-regular hours will only be gained through contact with the Kiewit Project Director. Private vehicles will not be allowed on the construction site unless approved by the Kiewit Project Director. If approved on site, private vehicles will adhere to all instructions and safety requirements designated by the Kiewit Project Director. If traveling through or to any operational areas, private vehicles will be escorted. Visitors will undergo a visitor's induction and their host will be responsible for all actions and conduct of the visitor. During all times, visitors will be accompanied by personnel who have previously undergone training as described in Section 10.0.

10.3.2 Spencer Creek

Resource Environmental Solutions (RES) will establish a construction staging area at the Spencer Creek restoration area. The staging area will be protected on all sides by a chain link fence with barbed wire. Fueling of construction equipment will take place via a mobile fuel truck during daylight hours. The fuel truck will be stored in a secure offsite facility after hours. The procedures outlined within this SPCC plan for handling, containment, and inspections will be utilized by RES during refueling operations at Spencer Creek.

11.0 References

Federal Energy Regulatory Commission (FERC). 2018 Order Amending License and Deferring Consideration of Transfer Application FERC Project Nos. 2082-062 and 14803-000. 162 FERC ¶ 61,236. Washington, DC, Federal Energy Regulatory Commission, Office of Energy Projects, Division of Hydropower Licensing.

PacifiCorp (PacifiCorp). 2004. Environmental Report. Final License Application, Volume 2, Exhibit E. Klamath Hydroelectric Project (FERC Project No. 2082).

Appendix A

Quick Reference Information

Quick Reference Information

John C. Boyle Hydroelectric

Facility 26020 Highway 66

Keno, OR 97627

PHONE

Spill Team Leaders

Primary Spill Team Leader	TBD
Telephone:	TBD

Secondary Spill Team Leader	TBD
Telephone:	TBD

Security Team (available 24 hours/seven days a week)	TBD
Telephone:	TBD

Local/State/Federal Agencies

Federal Energy Regulatory Commission (FERC) Regional Office	503-552-2715
---	--------------

National Response Center (NRC)	800-424-8802
--------------------------------	--------------

Oregon Office of Emergency Management (OEM)	503-378-2911
---	--------------

Oregon Emergency Response System (OERS) / State Emergency Response Commission (SERC)	800-452-0311
---	--------------

Oregon Department of Environmental Quality (ODEQ)	503-229-5696
---	--------------

Klamath County Office of Emergency Management (OEM))	541-851-3741
--	--------------

Keno Fire Department	911 or 541-884-5844
----------------------	---------------------

Klamath Falls Police Department	911 or 541-883-5336
---------------------------------	---------------------

Sky Lakes Medical Center	541-882-6311
--------------------------	--------------

Emergency Response Contractors

TBD	TBD
-----	-----

Oil Spill Discharge Notice

In the event of an oil spill, employees will take the following actions:

1. Immediately notify Spill Team Leader or closest supervisor.
2. The Spill Team Leader (primary or alternate) or supervisor in the absence of the Spill Team Leader(s) will assemble the Response Team (properly trained employees) for immediate action.
3. The properly trained employees will contain the spill with an absorbent material such as floor dry or absorbent pads or booms.
4. The properly trained employees will take steps to safely stop the cause of spill such as shut off pumps, close valves, or stop loading/unloading operations.
5. Take additional steps as directed by the Spill Team Leader(s) or supervisor to contain or clean up the spill.
6. Make every effort to prevent the spill from reaching surrounding or underlying soil, sanitary sewers, storm sewers, ditches, streams, ponds, or otherwise escaping from the Site.

Discharge to Water

A discharge to water is defined as a discharge of any amount of oil to any portion of the Klamath River, its tributaries, associated reservoirs, or other regulated bodies of water. In general, cleanup of a discharge to water is beyond Facility personnel capability. In the event of a discharge to water, immediately notify the Spill Team Leader and follow all reporting and response procedures for discharges in Section 8.5 of this SPCC.

Reportable Quantity

In the event of a spill, estimate the amount of oil or fuel released and report this quantity to the Spill Team Leader(s). The Spill Team Leader(s) will determine if agency verbal notification and/or report(s) is/are needed. The Spill Team Leader(s) is familiar with the reporting procedures (Section 6.0) and has a copy of this SPCC Plan. Below provides a summary of reporting requirements for local, state, and federal agencies.

Release Reporting Requirements

Pertinent federal and state reporting requirements are summarized below. Complete spill reporting procedures are presented in Section 6.0 of this SPCC.

Federal

A report must be made to the National Response Center (800-424-8802) if there is a single discharge of more than 1,000 US gallons or more than 42 gallons in each of two discharges within any 12-month period. In addition, contact the National Response Center, (800) 424-8802, within an hour of the event if:

1. Oil is spilled into or upon surface water or an adjoining shoreline.
2. Oil has potential of reaching navigable waterways.
3. If there is a release of a hazardous substance exceeding the Reportable Quantity (Section 6.0).

State

Immediate notification must be made to the Local Emergency Response Agency (911); Oregon Office of Emergency Management (OEM) at 503-378-2911, Oregon Emergency Response System (OERS) / State Emergency Response Commission (SERC) at 800-452-0311; and the Oregon Department of Environmental Quality (ODEQ) at 503-229-5696; and the Klamath County Office of Emergency Management (OEM) at 541-851-3741 for any of the following:

- Discharges or “threatened release” of oil in marine waters
 - A “threatened release” is a condition creating a substantial probability of harm that requires immediate action to prevent, reduce, or mitigate damages to persons, property, or the environment (Health and Safety Code §25501 (v)).
- Any spill or other release of one barrel (42 gallons) or more of petroleum products at a tank Facility
- Discharges of any hazardous substances or sewage, into or on any waters of the state (wetlands, waterways, vernal pools, etc.) that produce a sheen on the water
- Discharges that may threaten or impact water quality
- Any found or lost radioactive materials
- Discharges of oil or petroleum products, into or on any Waters (wetlands, waterways, vernal pools, etc.) of the State
- Hazardous liquid pipeline releases and every rupture, explosion, or fire involving a pipeline
- A release causing off-site damage to public or private property
- An uncontrolled or unpermitted release that has escaped secondary containment, or extended into any sewers, stormwater conveyance systems, utility vaults and

conduits, wetlands, waterways, or public roads, or was conveyed off-site.

If the release of oil is on LAND and is not discharged or threatening to discharge into State Waters and (a) does not cause harm or threaten to cause harm to the public health and safety, the environment, or property; (b) is under 42 gallons; **and** (c) does not enter a public stormwater or sanitary sewer conveyance system, then **no notification** to the Oregon OEM, OERS/SERC, ODEQ or Klamath County Office of Emergency Management **is required**.

The Oregon Highway Patrol (911) must be notified for spills occurring on highways in the State of Oregon. The nearest highway is I-5.

Local

In the event of either of the above, the local Certified Unified Program Agency (CUPA) must also be notified. Call the Klamath County Office of Emergency Management at 541-851-3741 (between 8:00 AM and 5:00 PM, Monday through Friday) or 911 after office hours.

Appendix B

Certification of the Applicability of the Substantial Harm Criteria

Appendix B

J.C. Boyle Facility Certification of the Applicability of the Substantial Harm Criteria

Facility Name: J.C. Boyle Facility

Facility Address: John C. Boyle Hydroelectric Facility, 26020 Highway 66, Keno, OR 97627

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

Yes _____ No X _____

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?

Yes _____ No X _____

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix to a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, See Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (see Appendix E to this part, Section 10, for availability) and the applicable Area Contingency Plan.

Yes _____ No X _____

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula) such that a discharge from the facility would shut down a public drinking water intake?

Yes _____ No X _____

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced reportable oil spill in an amount greater than or equal to 10,000 gallons within the past five (5) years?

Yes _____ No X _____

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Signature:

Name:

(please print or type)

Title: _____ Date: _____

Appendix C

J.C. Boyle Facility Maps

C:\Users\uhlmann\Box\GIS\Project_Based\Klamath_River_Renewal_MJA\GIS_Request_Tracking\GIS_Request_Management_Plans\KnightPiesold_MPs\traffic_MP_draft2\Security_MP_KP_v2.mxd Revised: 2020-11-13 By: uhlmann



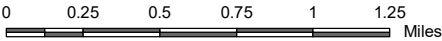
Klamath River Restoration Project

Security Map

J.C. Boyle Facility

November 13, 2020

(At original document size of 11x17)
1:39,700



**PRELIMINARY DESIGN
(NOT FOR CONSTRUCTION)**

Legend

- Security Pipe Gate and Guard Shack
- Security Unmanned Pipe Gate
- Access Routes
- Project Features
- Reservoir Boundaries
- Streams

Notes
1. Coordinate System: NAD 1983 2011 StatePlane California I FIPS 0401 Ft US
2. Data Sources:
Security Locations: Knight Piesold; Access Routes: Knight Piesold, 100 Design Drawings; Streams and Reservoir: NHD.
Background Imagery: Copernicus Sentinel data Nov. 5 2020, processed by ESA

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. McMillen Jacobs Associates has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. McMillen Jacobs Associates assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

**J.C. Boyle
Dam**

White Conex:

- (1) - 55 gal Drum Mobile Grease XHP 322 Mine
- (4) - 220 gal Oil Storage Drum
- (1) - 552 gal Steel AST Gasoline

Lube Conex:

- (2) - 280 gal Mobil Delvac 1300 Super SAE 15W-40
- (1) - 280 gal Mobile Hydraulic SAE 10W
- (1) - 280 gal Mobile Delvac Extended Life 50/50 Coolant/Antifreeze
- (1) - 280 gal Mobil Trans HD30 Drive Train Oil SAE 30
- (1) - 280 gal Mobil Trans HD SAE 50W
- (1) - 280 gal Mobilube HD Plus Gear Lubricant SAE 85W-140
- (1) - 650 gal Used Oil

**Communications
Building**

Spill Kit

Green Conex:

- (1) - 55 gal drum Used Oil
- (2) - 55 gal drum Misc. Oil Products

Refueling Area:

- (1) - 500 gal Convault Fuel Tank
- (1) - 1,000 gal Convault Fuel Tank
- (2) - 1,000 gal Diesel Fuel AST
- (2) - 5,000 gal Diesel Fuel AST

Oil Storage Conex:

- (1) - 55 gal Drum CAT 15W-50 Engine Oil
- (1) - 55 gal Drum Mobil Hydraulic 10W
- (1) - 55 gal Drum 50/50 Coolant/Antifreeze
- (1) - 55 gal Drum Mineral Spirits Material: 122374
- (1) - 55 gal Drum Lubricant 85-140
- (1) - 55 gal Drum Synthetic SAE 5W-40
- (1) - 55 gal Drum SAE 5W-30 Motor Oil
- (1) - 55 gal Drum EAL 224H AW
- (1) - 55 gal Drum Mobil DTE 10 Excel 46
- (1) - 55 gal Drum Mobil Grease XHP 322 MINE

**Area cleared of
trees**

**Truck parking
area**

○ **General Area of Equipment**



300 ft

Trailer Parking

Yellow Conex:
(1) - Spill Kit
(1) - Generator Oil (<10 gal)

Generator (DCA125SSIU4F)
(1) – 169 gal diesel fuel

Employee Parking

Office

○ General Area of Equipment

200 ft



**Truck and
Equipment
Parking**

Green Conex:

- (1) - 55 gal drum Used Oil
- (2) - 55 gal drum Misc. Oil Products

Main Yard

Powerhouse

Employee Parking

Yellow Conex:

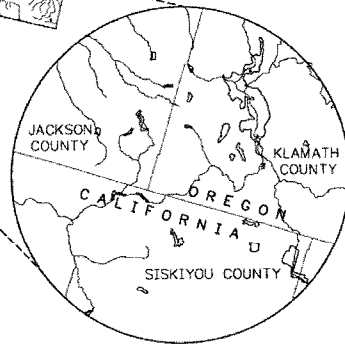
- (1) - Spill Kit
- (1) - Generator Oil (<10 gal)

Generator (DCA125SSIU4F)
(1) - 169 gal diesel fuel

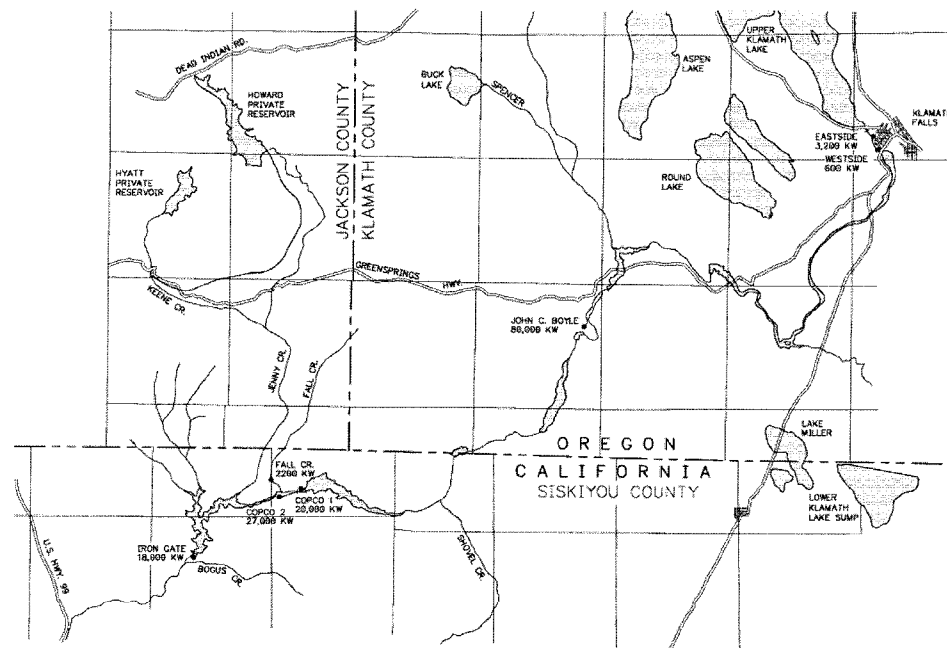
○ General Area of Equipment

200 ft





- POWERHOUSE
- DIVERSIONS



APPROXIMATE SCALE: 1"=30000'



SCALE: 1"=120' MILES

CAD No: 45608H01.DWG

PLOT SCALE: 1 = 7603200

PROJ#	14913
ER#	KJC4SPCC
DATE	08-12-94
ENG CM/RISI	DES CM/RISI
DR FN/RISI	CH BJ

APPROVAL

BARBARA JASA

ROGER L. RAEBURN

J.C. BOYLE HYDRO PLANT
SPCC PLAN
EXHIBIT A

GENERAL LOCATION & VICINITY MAP



HYDRO

SCALE: AS NOTED

SHEET 1 OF 1

PB-45608

REV.
1

No.	DATE	REVISION	BY	CHK APP	DRAWING No.	REFERENCE DRAWINGS
0	3-14-95	ISSUED WITH INITIAL SPOC PLAN	CM	BJ RLR		
1		ISSUED AS-BUILT FOR SPOC PLAN	TSB			

**CRITICAL ENERGY/ELECTRIC INFRASTRUCTURE INFORMATION
(CEII)**

REDACTED

J.C.BOYLE HYDRO PLANT SPCC PLAN EXHIBITS C, D, AND E

Appendix D

Internal Spill Report Form and CEPC Form

Appendix D

J.C. Boyle Facility Internal Spill Report Form

NOTE: All spill reports are uploaded to KieTrac.

In the event of an oil or hazardous substance spill, the Spill Report Form must be completed to the extent information is available prior to contacting regulatory agencies and/or emergency response organizations.

Date of Spill: _____ Date of Spill Discovery: _____

Time of Spill: _____ Time of Spill Discovery: _____

Facility Name: J.C. Boyle Facility

Facility Location (Address/Lat-Long/Section Township Range): _____

Name and Title of Discoverer: _____

Damage and injuries: _____

National Response Center (800) 424-8802 called; name of person to whom report was made; and time called:

Oregon Office of Emergency Management (OEM) 503-378-2911 called; name of person to who report was made; _____

and time called: _____

Klamath County Office of Emergency Management 541-851-3741 called; name of person to whom report was made;
and time called: _____

Cleanup contractor contacted; name of person who was spoken to; and time called: _____

Other and time: _____

Type of material spilled and manufacturer's name: _____

Description of spill location: _____

Directions from nearest community: _____

Estimated volume of spill: _____

Weather conditions: _____

Topography and surface conditions of spill site: _____

Spill underlying medium (pavement, sandy soil, water, etc.): _____

Proximity of spill to surface waters: _____

Did the spill reach a body of water _____ Yes _____ No

If so, was an oil sheen present on the water body? _____ Yes _____ No

Describe the causes and circumstances resulting in the spill: _____

Describe the extent of observed contamination, both horizontal and vertical (*i.e.*, spill-stained soil in a 5-foot radius to

a depth of 1 inch): _____

Describe immediate spill control and/or cleanup methods used and implementation schedule: _____

Current status of cleanup actions: _____

Name/Company/Address/Phone Number for the following:

Spill Team Leader: _____

Person Who Reported the Spill: _____

Environmental Inspector: _____

Form completed by: _____ Date: _____

304 Emergency Release Notification
WRITTEN FOLLOW-UP REPORT
Per 40 CFR 355 (42USC Ch. 116 §11004 et seq.)



This form must be submitted within 30 days of the release.

GENERAL INFORMATION	
1. COMPANY NAME:	
2. LOCATION ADDRESS:	
3. COMPANY CONTACT PERSON:	
4. CONTACT PHONE NUMBER:	
RELEASE INFORMATION	
5. CHEMICAL RELEASED:	
6. AMOUNT/STATE OF RELEASE:	
7. DATE/TIME OF RELEASE:	
8. DATE/TIME STOPPED:	
9. LOCATION OF SPILL:	
10. ACTIONS TAKEN:	
11. RELEASE REPORTED TO:	
12. PERSON(S) AGENCY REPORTING RELEASE:	
13. KNOWN HEALTH RISKS:	

304 Emergency Release Notification
WRITTEN FOLLOW-UP REPORT
Per 40 CFR 355 (42USC Ch. 116 §11004 et seq.)



This form must be submitted within 30 days of the release.

**14. ADVICE FOR EXPOSED
INDIVIDUALS:**

15. ADDITIONAL INFORMATION:

**16. LIST OF ATTACHED
INFORMATION:**

MAIL TO BOTH: Oregon State Emergency Response Commission (SERC)
3565 Trelstad Ave SE
Salem, Oregon 97317-9614

Erin Williams
US EPA – Region 10, M/S OCE-201
1200 6th Avenue, Suite 155
Seattle, WA 98101

EMAIL TO: serc@osp.oregon.gov AND sfm.cr2k@osp.oregon.gov AND Williams.Erin@epa.gov

Appendix E

Bulk Oil Container Inspection Checklist and Secondary Containment Retained Precipitation Discharge Log

Appendix E

J.C. Boyle Facility Bulk Oil Container Inspection Checklist and Secondary Containment Retained Precipitation Discharge Log

These written inspection and log forms or their KieTrac equivalent, and their associated procedures, are to be completed by qualified and trained J.C. Boyle (Kiewit) facility personnel and signed by the appropriate Kiewit supervisor or manager. They should be made part of the Kiewit facility SPCC Plan or stored electronically and maintained for a period of three (3) years. The qualified and trained inspector must complete this form for each oil-containing container listed in the Kiewit facility SPCC Plan on a monthly basis.

The secondary containment retained precipitation discharge log must be completed at every discharge of accumulated precipitation and other waters within the secondary containment areas.

1.1.1.1 J.C. Boyle Facility

Oil Containing Equipment, ASTs, Reservoirs, or Drums Inspection Checklist

Date: _____ Inspected By: _____

Tank No./Drummed Area No. _____ Tank/Drum Contents: _____

General Comments: _____

Legend: "X" = Satisfactory; "RR" = Repair Required; "NA" = Not Applicable

Container Structure and Corrosion Control	
_____	General tank/drum appearance good: No rusting, corrosion, pitting, cracking, seam failure leaks or drips (circle if present)
_____	Tank/drum surfaces and underlying areas absent of any oil product or other signs of leakage, overfilling, or spillage.
_____	General pipes and valves appearance good: No rusting, corrosion, pitting, cracking, leaks or drips (circle if present)
_____	All insulating/isolating flange washers and sleeves in place and not damaged
_____	All ground and/or anode straps in place and not damaged
_____	Bolt, rivets, or seams not damaged
_____	For Tanks/Equipment Reservoirs: all access manways or ports fastened tight and secured
_____	For Tanks/Equipment Reservoirs: Supporting structures and seismic/floating restraints competent, in place, and functioning
_____	For Tanks/Equipment Reservoirs: all vents clear, all fill ports capped and locked
_____	For Tanks/Equipment Reservoirs: all site gauges, mechanical gauges, overfill prevention devices, and other appurtenances are operable and functioning
_____	For Drums: all fill ports adequately capped and sealed; drum top adequately secured; drums placed outside of areas of vehicular traffic
_____	Paint/ coating in place and not damaged
Corrective Action Needed:	

Hoses and Piping	
_____	General pipes and valves appearance good: No rusting, corrosion, abrasion, pitting, cracking, leaks, or drips (circle if present)
_____	All valves in locked position; all locks/chains in place to prevent valve movement
_____	All valved connection or fill port ends blind-flanged or capped
_____	Buried piping is not exposed
_____	Buried piping's cathodic protection in place
_____	Secondary containment around piping or hoses outside of secondary containment areas in place with no apparent damage
Corrective Action Needed:	
<u>Rainwater Accumulations/Contamination</u>	
_____	Water in Containment Area: Yes/No (circle); if so free of oil sheen presence: Yes/No (circle); If water present was water removed as part of inspection: Yes/No (circle)
_____	Containment area drainage valves are closed and locked to prevent valve movement.
_____	All tank/drum surfaces clean and absent of signs of leakage; spillage, or overfilling
Corrective Action Needed:	
Signage/Security	
_____	All required placards, signage, and labels are in place and current
_____	High level alarms functioning properly and tested to verify
_____	All AST, equipment, or piping barricades, bollards, guards, or fencing is in place to prevent damage from vehicular traffic or equipment movement
Corrective Action Needed:	

Inspection Checklist Stormwater

Removal/Dewatering Form

Project Name:	J.C. Boyle Facility	Tank/Equipment ID Number (if applicable):	
Date & Time:		Type of Tank/Equipment in containment (generator, transformer, fuel tank, etc.):	
Tank/Equipment Location:		Your Name:	

This procedure is for draining storm water from secondary containment enclosures for fuel tanks, generator containments, transformer containments and sumps.

1.1.2 This form is used to ensure that oil pollutants are not able to migrate or mix with surfaced waters.

1	Look at the containment. Is there water in the containment with a sheen on it?	No, there is no oil sheen or residue observed – proceed to step # 3 Yes, an oil sheen or residue exists – proceed to step # 2	<i>Yes/No (circle one)</i>
2	Use oil absorbent white diapers to collect sheen from water, repeat step 1.	If the quantity of oil or fuel is too great to be removed with diapers, contact your supervisor or environmental to get assistance with disposal.	<i>Mark X when complete</i>
3	Allow clean water to drain from the containment.	To do this insert clean sump pump, open drain valve or fold down flexible containment.	<i>Mark X when complete</i>
4	Re-stage the containment back to proper working order.	Ensure containment has all sides erected and supported. Pumps and hoses should be removed from containment.	<i>Mark X when complete</i>
5	Take oily diapers and debris to Green Conex for disposal.	Oil diapers must be bagged and placed into an oily debris black barrel, located at the green conex.	<i>Mark X when complete</i>
6	Give this COMPLETED form to Kiewit Environmental.	COMPLETED form can be submitted by scan and email, hand delivered or dropped off at building 1 environmental drop•box.	<i>Mark X when complete</i>
Comments:			

Signature by field operation

This form will be maintained with the project SPCC environmental files.

Appendix F

Oil Spill Response Guide

Appendix F

J.C. Boyle Facility Oil Spill Response Guide

These written instructions provide a generalized outline for a spill response. However, the magnitude, type of released materials, weather conditions at time of release, and the associated hazards they present will dictate the actual type of response performed. All responses shall take into account personnel and public health and safety as priority. All spill response must be performed by skilled, qualified, and trained responders and be as approved by or contracted by J.C. Boyle Facility (Kiewit), and the associated Spill Team Leader.

Oil Spill Response Guide

1. Introduction

1.1 Purpose

The purpose of this Spill Response Guide is to provide a generalized guidance document regarding the procedures to be followed by Kiewit staff in the event of a spill at the Kiewit facility.

1.2 Chain-of-Command

A chain-of-command for the responsibility and supervision of the implementation of this Spill Prevention, Control, and Countermeasure Plan (SPCC) has been developed and made known to all applicable Kiewit employees and supervisory personnel. This chain-of-command outlines the emergency notification procedures to be used in the event of an oil spill. Kiewit personnel are instructed to immediately contact the Spill Team Leader in the event of a spill incident. The Spill Team Leader will make an immediate inspection and assessment of the spill; implement initial spill control and countermeasures as applicable; and advise designated management personnel.

The name and telephone number of the Spill Team Leader to be contacted in the event of a spill is:

Primary Spill Team Leader	TBD
---------------------------	-----

Telephone:	TBD
------------	-----

Secondary Spill Team Leader	TBD
-----------------------------	-----

Telephone:	TBD
------------	-----

Security Team (available 24 hours/seven days a week)	TBD
--	-----

Telephone:	TBD
------------	-----

1.3 Incident Occurrence

The following sections detail the response actions of the various personnel involved in responding to an emergency incident.

1.3.1 Observation/Immediate Corrective Action/Containment

When a spill incident occurs, the Kiewit employee who witnesses the spill shall conduct the following actions:

- Notify the employee's supervisor of the spill incident.
- Employee's supervisor notifies the Spill Team Leader of the incident.
- The Spill Team Leader will notify other Site workers, contractors and visitors of the potential hazards present and notify appropriate Federal, State, Local and Emergency Agencies, as warranted per the details in Section 6.0 of the SPCC Plan.

Any employee who witnesses the spill is trained during initial employment to determine: the type of material spilled and its associated hazards; the extent and need for control or countermeasure for the release; and if the implementation of spill control and countermeasure/clean-up measures can be implemented safely. The employee reporting the spill incident shall remain at a safe location near the incident until spill team responders arrive or is told otherwise by the employee's supervisor or the Spill Team leader.

In the case where verbal notification to regulatory authorities is required (as per Section 6.0 in the SPCC), the Spill Team Leader reporting the spill incident to applicable regulatory agency or emergency services personnel will typically provide the following information:

- Person and job title of person making report (if not the Spill Response Team Leader/Spill Incident Responsible Person), with applicable contact information.
- Exact address and location of the Site, including longitude and latitude if requested.
- Date, duration, and estimated time of initial release.
- Type of material released and indication if material is an extremely hazardous substance.
- Estimates of the quantity released (in pounds [required] / in gallons [optional]).
- Released to what medium (containment structure, building interior, outside paved surface, outside permeable (graveled, landscaped, or bare ground surface, air, water, etc.).
- Whether an evacuation is needed, or has been initiated.
- Source of the release.
- Cause of the release (human error, equipment malfunction, vehicle impact, etc.).
- Description of the location of the release.
- Description of all affected media (surface water, ground water, soils, pavements, facilities, and air).
- Physical damage to or loss of facilities.
- Human injuries or rapid illnesses (including anticipated acute or chronic human-health based risks).
- Actions being used to stop, control, contain, remove, and mitigate the effects of the release, and discharge.
- Did the discharged material enter a sanitary sewer collection and conveyance system on-site and /or off-site, including the Site's septic tank or leachfield.
- Did the discharged material enter a surface/stormwater collection and conveyance system on-site (i.e. the sumps), or was it conveyed off-site.
- Total estimated volume and type of oil products on-site ("approximately 700 pounds/100 gallons of diesel fuel").
- Names of individuals and organizations that have been contacted.
- Emergency personnel and regulatory authorities on scene.
- Emergency personnel and regulatory authorities notified.

Once immediate and further control, countermeasure, and clean-up activities have been implemented and the incident has been controlled and stabilized, the Spill Team Leader will conduct an assessment to determine the appropriate further actions, if any, including the identification of external reporting

obligations. The primary focus of the assessment is to gather factual information regarding the nature, extent, and timeframe of the release as well as to determine potential impacts to on-site and off-site personnel and all environmental media. The assessment includes a review of the spill/release details, the nature and quantity of material involved, and the reportable quantity.

1.4 Agency Notification

Based on the assessment, the Spill Team Leader determines whether immediate notification to agencies, including United States Environmental Protection Agency (U.S. EPA), Oregon's Office of Emergency Management (OEM), Oregon Emergency Response System (OERS), local emergency response personnel, and other local regulatory authorities is required.

Per 40 CFR 112.7(a)(4), the Spill Team Leader, or other personnel designated, will report the following information to all agencies requiring notification:

- Exact address or location and phone number of Site (Refer to Applicable Appendix).
- Date and time of the discharge.
- Type of materials discharged.
- Estimates of the total quantity discharged (pounds/gallons [use 8.3 pounds per gallon]).
- Source of discharge.
- A description of all impacted media (soil, groundwater, surface water, air, etc.).
- The cause of the discharge.
- Any damages or injuries caused by the discharge.
- Actions being used to stop, remove, and mitigate the effects of the discharge.
- Whether an evacuation is needed.
- The names of individuals and/or organizations that have also been contacted.

Primary Contacts:

- National Response Center (NRC)
- Oregon's Office of Emergency Management (OEM)
- Oregon Emergency Response System (OERS)

In the event of an incident that presents a serious hazard to property or public health and safety, the Spill Team Leader or his designee will notify the following municipal agencies:

- Fire 911
- Sheriff / Police 911

1.5 Spill Response Procedures

Spill control and cleanup equipment, such as absorbent materials pads, socks, pillows, booms, bulk loose, brooms, shovels, and portable pumps, as well as personal protective equipment, are located in spill kits placed in proximity to the bulk oil container locations.

The following general procedures will be initiated upon the release of oil and/or liquid chemicals:

1. Spill and Hazard Recognition

- Recognizes that spill has occurred.
- Identify the type of material release and its potential hazards; review MSDS as warranted.
- Assess the hazards to human health and the environment as represented by the spilled materials.
- Determines best next course of action for response and notification in accordance with the Kiewit SPCC plan.

2. Spill Response Procedure for On-Site Personnel

- Safety and protection of human health is first priority.
- Immediately shut off all pumps or close appropriate valves and stop all transfer operations if safe to do so.
- Determine the supply and source of the spill and stop the leak, if possible and is safe to do so.
- Contact emergency response personnel, as warranted.
- Warn people in the area if there is a danger to life or property, warn all plant employees, and assist any injured people.
- Provide physical barrier to prevent unauthorized access to spill.
- **NOTE: TYPICAL SPILL RESPONSE IS LIMITED TO RECOGNITION, DIVERTING, AND MITIGATING SPREAD OF SPILL ONLY. UNLESS RESPONDING KIEWIT STAFF HAVE COMPLETED AND ARE CURRENT WITH THE REQUIRED HAZWOPER AND SPILL RESPONSE TRAINING, AND ARE UNDER THE DIRECTION AND SUPERVISION OF THE SPILL TEAM LEADER.**
- Control and contain the spilled material, limiting the extent of the spill, especially if there is a danger of it entering an on- or off-site stormwater or sanitary sewer conveyance system, or waterway, or spreading off-site. Utilize absorbent pads, booms, spill dikes, absorbent bulk material berms or soil berms as needed to divert and contain the flow, and keep the spilled oil material from going off-site or into a storm drain feature or surface water body, or into a sanitary sewer facility.
- Recover and remove the spilled material as quickly as possible. For small quantities, utilize absorbent materials; for larger quantities, Spill Team Leader to make decision whether to use portable pumps and waste containers/tanks to collect the spill; or to contract with outside spill response contractor. The recovered material must be properly contained (in containers compatible with materials recovered) and stored until disposed of by an acceptable method in accordance with all local, state and federal requirements.
- Remove residual material by the use of absorbent materials. When saturated, the absorbent material must be properly containerized (in containers compatible with materials recovered), stored, and disposed of, by an acceptable method in accordance with all local, state, and federal requirements.
- The Spill Team Leader or his alternate will notify appropriate individuals and regulatory authorities as per Section 6.0 in the SPCC of the Kiewit SPCC Plan.

Notify the Spill Team Leader or his alternate and be prepared to provide the following information:

1. Type of materials discharged.

2. Estimates of the total quantity discharged (pounds and/or gallons; use 8.3 pounds per gallon for approximate conversion, round up to nearest pound).
3. Source of discharge.
4. A description of all impacted environmental media (soil, surface water, groundwater, air).
5. The cause of the discharge.
6. Any damages or injuries caused by the discharge, actions being used to stop, remove, and mitigate the effects of the discharge.
7. Actions being used to stop, remove, and mitigate the effects of the discharge.
8. Whether an evacuation is needed.
9. Emergency or regulatory authority personnel notified.
10. Emergency or regulatory authority personnel on scene (including names and who they are representing).
11. Name and job title of person making report.

Remain on-site until arrival of emergency response personnel and Spill Team Leader.

3. Responsibility of Spill Team Leader

- a. Evaluate situation and hazards present based on initial information and give instructions as required.
- b. Proceed immediately to location of incident to direct response efforts.
- c. If a release of oil or liquid chemicals has occurred which could threaten human health or the environment, immediate notification must be given to emergency response personnel (i.e. fire and sheriff/police). As warranted, and if a reportable quantity has been released, or if the spill has or could have the potential to reach a navigable water way, contact the **National Response Center (1-800-424-8802); Local Emergency Response Agency (911); State Emergency Response Commission (SERC) can be made by calling the Oregon Emergency Response System (OERS) at 800-452-0311 or 503-378-6377; the Oregon's Office of Emergency Management (OEM) at 503-378-2911 and the Certified Unified Program Agency (CUPA) / Administering Agency (AA) / Participation Agency (PA) Klamath County Public Health Department at 541-851-3741.; 911 (all other hours))**. As warranted, following notification to OERS Warning Center, Kiewit may need to notify the the Klamath County Public Health Department, and/or Oregon Department of Fish and Wildlife, depending on the actual or potential threats or impacts present as a result of the release. Have the following information ready when making the call.
 - Person and job title of person making report (if not the Spill Response Team Leader/Spill Incident Responsible Person), with applicable contact information.
 - Exact address and location of the Site, including longitude and latitude if requested (see various Appendices for information).
 - Date, duration, and estimated time of initial release.
 - Type of material released and indication if material is an extremely hazardous substance.

- Estimates of the quantity released (in pounds [required] / in gallons [optional]; use 8.3 pounds per gallon for approximate conversion, round up to nearest pound).
 - Released to what medium (containment structure, building interior, outside paved surface, outside permeable (graveled, landscaped, or bare ground surface water, air, groundwater, etc.).
 - Whether an evacuation is needed, or has been initiated.
 - Source of the release.
 - Cause of the release (human error, equipment malfunction, vehicle impact, etc.).
 - Description of the location of the release.
 - Description of all affected media (surface water, groundwater, soils, pavements, facilities, and air).
 - Physical damage to or loss of facilities.
 - Human injuries or rapid illnesses (including anticipated acute or chronic human-health based risks).
 - Actions being used to stop, control, contain, remove, and mitigate the effects of the release, and any off-site discharge.
 - Did the released material enter a sanitary sewer collection and conveyance system on-site and/or off-site, including any applicable septic tank or leach field.
 - Did the discharged material enter a surface/stormwater collection and conveyance system on-site (including ditches), or was it conveyed off-site.
 - Total estimated volume and typed of oil products on-site (“approximately 830 pounds/100 gallons of diesel fuel,” etc.).
 - Names of individuals and organizations that have been contacted.
 - Emergency personnel and regulatory authorities on scene.
 - Emergency personnel and regulatory authorities notified.
- d. Complete entering the initial information, complete incident investigation and enter remaining required information in online report.
 - e. Ensure that all corrective and items remedial measures identified in the incident report have been implemented and entered in the online reporting system.

1.6 Spill Containment (40 CFR 112.7[C])

The Kiewit facility employs a variety of countermeasures to contain spills once they occur. The secondary containment features around all bulk oil storage containers should prevent a spill from happening.

NOTE: TYPICAL SPILL RESPONSE IS LIMITED TO RECOGNITION, DIVERTING, AND MITIGATING SPREAD OF SPILL ONLY. UNLESS RESPONDING KIEWIT STAFF HAVE COMPLETED AND ARE CURRENT WITH THE REQUIRED HAZWOPER AND SPILL RESPONSE TRAINING, AND ARE UNDER THE DIRECTION AND SUPERVISION OF THE SPILL TEAM LEADER.

If a minor oil product spill occurs in a secondary containment area, safety and protection of human health is first priority. All pumps or valves are immediate shut-off or closed, and all transfer operations are stopped if safe to do so. If safe access can be afforded, then the supply and source of the spill is determined and the leak is stopped. If a small release (typically less than 5 gallons) has occurred, and if judged safe to do so by the Spill Team Leader the spilled oil material will typically be removed with

absorbent materials (pads, pillows, and bulk material), with the spent absorbent materials being placed in a properly labeled, DOT approved container for transport off-site for disposal purposes. If a larger (typically greater than 5 gallons of oil product) release occurs within the secondary containment area, the type of recovery will be determined by the Spill Team Leader, but generally the spilled oil product will be recovered with pumps or a vacuum truck; properly discharged into DOT approved and properly labeled drums or left in the vacuum truck; and transported and disposed/recycled off-site at a permitted facility. Residual oil product will be collected with absorbent materials (pads or bulk material) to the extent practicable. No “wash-down” of spilled oil materials will occur.

Should a spill escape the secondary containment structure, the following general procedures are followed:

- Safety and protection of human health is first priority.
- Immediately shut off all pumps or close appropriate valves and stop all transfer operations if safe to do so.
- Determine the supply and source of the spill and stop the leak, if possible and is safe to do so, as determined by the Spill Team Leader.
- Contact emergency response personnel, as determined by the Spill Team Leader.
- Warn people in the area if there is a danger to life or property; warn all facility personnel, guests, and visitors that may be in the area.
- Assist any injured people.
- Provide physical barrier to prevent unauthorized access to spill.
- Control and contain the spilled material, limiting the extent of the spill, especially if there is a danger of it entering an on- or off-site stormwater or sanitary sewer conveyance system, or waterway; or spreading off-site. Utilize absorbent pads, booms, spill dikes, absorbent bulk material berms or soil berms as needed to divert and contain the flow, and keep the spilled oil material from going off-site or into a storm drain feature or surface water body, or into a sanitary sewer facility.
- Cover and respond as feasible, and divert flow around and away from any storm drain collection features (drop inlets, area drains, curb inlets, catch basins, ditches, etc.), sanitary sewer collection and conveyance facilities (drains, traps, clean-outs, pipes, etc.), limiting the extent of the spill, especially if there is a danger of it entering an off-site stormwater or sanitary sewer conveyance system, or waterway.
- Recover and remove the spilled material as quickly as possible. For small quantities, utilize absorbent materials; for larger quantities, Spill Team Leader to make decision whether to use portable pumps and waste containers/tanks to collect the spill; or to contract with outside spill response contractor. The recovered material must be properly contained (in containers compatible with materials recovered) and stored until disposed of by an acceptable method in accordance with all local, State, and federal requirements.
- Remove residual material by the use of absorbent materials. When saturated, the absorbent material must be properly containerized (in containers compatible with materials recovered), stored, and disposed of, by an acceptable method in accordance with all local, State, and federal requirements.

These procedures vary depending on the size and location of the spill. Kiewit employees, who have received SPCC training are qualified and authorized to undertake response and countermeasures to minor oil spills.

1.7 Spill Control Equipment (40 CFR 112.7[A])

The Kiewit facility maintains an adequate supply of spill control equipment to respond to spills. This equipment is maintained throughout the facility, placed in relative close proximity to the bulk oil storage containers. Materials maintained for Hazardous Material Cleanup at the Kiewit facility include loose absorbent material, spill pads, socks, booms, PPE, etc.

The facility also has a limited amount of small-scale heavy equipment that if properly trained employees are available, could be utilized to assist in spill control and containment (i.e. the creation of temporary berms, boom/pad layout, temporary plugging or redirection of stormwater run-off, etc.).

1.8 Spill Clean-Up (40 CFR 112.7[A])

The facility employs a variety of countermeasures to handle spills once they occur. These procedures vary depending on the size and location of the spill. The following procedures should be followed in the case of small spills retained within containment areas if safe to do so:

- Absorb spilled materials using loose absorbent materials, pads, blankets, or pillows for low volume releases; a contracted vacuum truck will be utilized for larger oil spill or oily water recovery. Pick up non-liquid materials with non-sparking shovels or with brooms and dustpans.
- The recovered oil product, oily water, and/or spent absorbent materials will be placed in DOT approved containers and will be disposed of off-site in accordance with applicable federal and state regulations. Use liners as required.
- Consult with the Spill Team Leader and the Technical Advisor (as listed in the Hazardous Materials Business Plan) to ensure proper labeling of drums and disposal techniques and procedures.
- Properly label all drums for temporary on-site storage and off-site disposal.
- Clean spill control equipment and return them to proper storage space.
- Clean and/or restore spill surface as needed.
- As applicable, retain all wash and rinse water and transfer to appropriate on-site location for temporary storage for off-site disposal; or permitted on-site treatment and/or disposal facility.
- Establish and maintain an exclusion zone in the area of the spill to prevent unauthorized contact with spilled material, clean-up materials, and to avoid impacts to the public and to other Kiewit employees and guests during the spill response and clean-up period.

Large spills or spills that have the potential to enter the environment may require the response of an outside spill response contractor. If the Kiewit spill response team cannot adequately respond to a spill, the Spill Team Leader will contact the Management Team and jointly decide whether or not outside spill response contractor (or potentially others) needs to be engaged.

1.9 Spill Response during Off Shifts, Weekends or Holidays

For spills occurring during off-shifts, weekends and holidays, notify the area Supervisor, Security, and the Spill Team Leader immediately. If unable to make contact, the alternate Spill Team Leader shall be contacted immediately. If unable to make contact with the Spill Team Leader, the alternate Spill Team Leader shall be contacted immediately. Signage with contact numbers is posted.

1.10 Recovered Spill Material Containment and Disposal

The following response equipment is maintained at the various bulk oil storage container areas with the Kiewit facility and is available in the event of a spill of a regulated material.

- Spill kits (absorbent pads, pillows, and booms; bulk absorbent material)
- Shovels and pumps
- Mops and drums

The spill kits are placed in proximity to the location of the bulk oil storage containers.

1.11 Methods of Disposal

Recovered material will be properly containerized in suitable containers compatible with material to be stored or removed with the use of a contracted vacuum truck. All containers will be properly sealed and labeled. Recovered material will be properly disposed of at an appropriate approved disposal facility per local, state, and federal requirements.

Appendix G

Tank Truck Unloading Procedures

Appendix G

J.C. Boyle Facility Tank Truck Unloading Procedures

Driver Name: _____	Date: _____		
Driver Company: _____	Vehicle License: _____		
Tank Truck Unloading Procedure Checklist:	_____		
		YES	NO
1.) Tank trailer brakes set and driver remains with the vehicle during the entire unloading period.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.) Chocks placed behind and in front of the wheels of the trucks to prevent movement of the truck until unloading and all oil transfer procedures have been completed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.) Unloading operations performed only by reliable persons properly trained, instructed in, and made responsible, for careful compliance with applicable regulations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.) Unloading of tank trailers done during daylight hours except under emergency conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.) No naked flame of any kind permitted, for any purpose whatsoever, near the tank trailer or within the vapor area surrounding the tank trailer. Smoking is forbidden within this area. Only spark-proof tools used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.) The storage tank or container and tank trailer vented before connecting the unloading line.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.) The level in the receiving tank checked to assure that sufficient space is available to receive the contents of the trailer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.) The tank trailer number compared with that on shipping papers or invoices to determine the trailer's contents and avoid product mix-ups or contamination.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Continued on next page		
9.) Ground strap attached to the bumper of the tank trailer.	<input type="checkbox"/>	<input type="checkbox"/>
10.) The unloading line attached to the proper connection.	<input type="checkbox"/>	<input type="checkbox"/>
11.) Drip pans or absorbent pads placed under the valves and hose connections to contain any leaks or drips that may occur during the transfer operation.	<input type="checkbox"/>	<input type="checkbox"/>
12.) All adjacent or in proximity area drains, catch basins, curb inlets, floor drains, etc. plugged or otherwise capped to prevent inadvertent spillage into these collection facilities in the event of a release.	<input type="checkbox"/>	<input type="checkbox"/>
13.) All hoses, pipelines, and connections to be used for receipt or discharge of oil product visually inspected for damage or neglect prior to use.	<input type="checkbox"/>	<input type="checkbox"/>
14.) Inspection of receiving vessel or vehicle prior to loading or unloading for evidence of external damage or leakage.	<input type="checkbox"/>	<input type="checkbox"/>
15.) Ensure all hose and pipe connections are securely and appropriately fastened and secured.	<input type="checkbox"/>	<input type="checkbox"/>
16.) Verify requirement that the available storage capacity of the receiving tank prior to filling.	<input type="checkbox"/>	<input type="checkbox"/>
17.) Inspect the availability of absorbent pads and booms.	<input type="checkbox"/>	<input type="checkbox"/>
18.) Constant surveillance of loading/unloading operations.	<input type="checkbox"/>	<input type="checkbox"/>
19.) The bottom inlet valve and other proper valves opened in the unloading lines.	<input type="checkbox"/>	<input type="checkbox"/>
20.) Begin checking pump to assure no leakage at any of the connections. Should leakage be present, the pump will immediately be stopped. The liquid level in the receiving tank will be checked regularly and the pump stopped before the liquid overflows.	<input type="checkbox"/>	<input type="checkbox"/>
21.) After the liquid has been unloaded, close all valves, disconnect the loading line from the tank trailer, close the cap to the inlet, and tighten, cap, and secure all other closures with chains and locks, as appropriate.	<input type="checkbox"/>	<input type="checkbox"/>

Appendix H

Oil Transfer Procedure Checklist

Appendix H

J.C. Boyle Facility Oil Transfer Procedure Checklist

Driver Name: _____	Date: _____		
Driver Company: _____	Vehicle License: _____		
	_____	YES	NO
1.) Equipped with personal protective equipment (PPE). Chemical resistant gloves, hard hat, and safety goggles used during bulk transfer. PPE inspected for defeats or chemical residues prior to use. Gloves tested for leaks. Replace defective equipment, if necessary.	<input type="checkbox"/>	<input type="checkbox"/>	
2.) No eating, drinking, smoking or open flame within 50 feet of the area where the product is being transferred.	<input type="checkbox"/>	<input type="checkbox"/>	
3.) Wheels of all oil containing vehicles adequately chocked to prevent movement of the vehicle during oil transfer procedures.	<input type="checkbox"/>	<input type="checkbox"/>	
4.) Placed drip pans or absorbent pads under valves and hose connections to contain any leaks or drips that may occur during the transfer operation.	<input type="checkbox"/>	<input type="checkbox"/>	
5.) All adjacent or in proximity area drains, catch basins, curb inlets, floor drains, etc. plugged or otherwise capped to prevent inadvertent spillage into these collection facilities in the event of a release.	<input type="checkbox"/>	<input type="checkbox"/>	
6.) All hoses, pipelines, and connections to be used for receipt or discharge of oil product visually inspected for damage or neglect prior to use.	<input type="checkbox"/>	<input type="checkbox"/>	
7.) Inspected receiving vessel or vehicle prior to loading or unloading for evidence of external damage or leakage.	<input type="checkbox"/>	<input type="checkbox"/>	
Continued on next page			

8.) Ensured all hose and pipe connections are securely and appropriately fastened and secured.	<input type="checkbox"/>	<input type="checkbox"/>
9.) Closed and chained or locked all valves not in use to prevent drippage or leakage.	<input type="checkbox"/>	<input type="checkbox"/>
10.) Verified the available storage capacity of the receiving tank prior to filling. All ASTs and drums dipped prior to fuel or oil transfer to determine the ASTs or drum's remaining capacity.	<input type="checkbox"/>	<input type="checkbox"/>
11.) Ensured availability of absorbent pads and booms and BDG employee training in emergency shut-down system procedures is current.	<input type="checkbox"/>	<input type="checkbox"/>
12.) Provided constant surveillance of loading/unloading operations.	<input type="checkbox"/>	<input type="checkbox"/>
13.) Only filled ASTs or drums to 95% of rated nominal capacity to avoid overfilling.	<input type="checkbox"/>	<input type="checkbox"/>
14.) Ensured all valves and transfer facilities are adequately plugged, capped, flanged, etc. on both the container being filled and on the delivery truck, after completion of oil transfer procedures.	<input type="checkbox"/>	<input type="checkbox"/>
15.) Wiped up any drip or minor spills with absorbent pads as needed and properly disposed of spent pads. Employee training in emergency shutdown system procedure is current.	<input type="checkbox"/>	<input type="checkbox"/>

Appendix I

Monthly Inspection Checklist

J.C. Boyle Facility (Klamath County, OR)

Monthly Inspection - Coversheet

The Coversheet, Tank Inspection Checklist, and Notes & Remarks sheets form the body of the Monthly Inspection Form (MIF) as required per Section 7.1 *Inspections and Tests* (40 CFR 112.7[E] and 112.8[C]) of the SPCC. Note: All SPCC inspections are uploaded to KieTrac.

PROCEDURE

1. Read through the entire SPCC Plan to ensure understanding of the intent of the Plan.
2. Read through all of the MIF (Coversheet, Tank Inspection Checklist, and Notes & Remarks) to understand how to complete the inspection process. Kiewit's electronic KieTrac program can be used in lieu of manually filling out this form.
3. Review the Contacts Update section below to ensure all contact information is current and accurate. Revise as needed.
4. Complete the Tank Update section to ensure all added, removed, modified, or relocated tanks are identified and described.
5. Complete the Tank Inspection Checklist (or the equivalent on KieTrac) for all tanks on site.
6. When finished, summarize all findings in the Notes & Remarks section. All issues identified during the inspection should be listed in Notes & Remarks.

CONTACTS UPDATE

ROLE	Y*	N	New Name or Comment
1. Have the Spill Team Leaders changed?			Primary Spill Team Leader: TBD, (PHONE TBD) Secondary Spill Team Leader: TBD, (PHONE TBD)
2. Has the Spill Team Alternate changed?			TBD, TITLE TBD, (PHONE TBD)
3. Has the Project Construction Manager changed?			
4. Are there any other pertinent changes to the SPCC Plan that warrant an amendment?			

*Any item that receives "yes" as an answer shall be updated in the "New Name or Comment" Section.

TANK UPDATE

	Y*	N	Tank ID, Site Location
1. Have any NEW tanks been added?			
2. Have any tanks been taken out of service? (tank must be labeled "OUT OF SERVICE" with the date taken out of service)			
3. Have any tanks been REMOVED?			
4. Have any tanks been relocated elsewhere on the site? Indicate new location:			

NOTES:

AST = Above-ground Storage Tank

Monthly and 5-year inspections are required for all tanks identified.

Refer to Figures 2 through 8 for tank locations.

Tank "Type": G = Generator/Belly Tank, A = Above-ground Storage Tank, M = Mobile Refueler, ST = Steel Tote, P = Plastic Tote, D = Steel Drum

J.C. Boyle Facility (Klamath County, OR)

Monthly Inspection - Tank Inspection Checklist

This inspection record must be completed *each month* for *each tank* and maintained for three years. Any discrepancies shall be noted in the Description & Comments Section on each checklist. A summary of all discrepancies should be added to the Notes and Remarks sheet.

Tank ID: _____ Date: _____ Time: _____ Weather Conditions: _____

*Any item that receives “yes” as an answer shall be described in the "Notes & Remarks" sheet and addressed immediately.

	Y*	N	N/A	DESCRIPTION & COMMENTS
1. Tank Containment				
1.1 Is there water in primary tank, secondary containment, interstice, or spill container?				
1.2 Is there product in the secondary containment, interstice, or spill container?				
1.3 Debris or fire hazard in containment?				
1.4 Drain valves operable and in closed position?				
1.5 Drainage pipes/valves fit for continued service?				
1.6 Tank containment manways and egress pathways clear?				
1.7 Tank containment gates/doors operable?				
1.8 Containment structure in satisfactory condition?				
2. Tank Foundation, Supports and Coating				
2.1 Evidence of tank settlement or foundation washout?				
2.2 Cracking or spalling of concrete pad or ringwall?				
2.3 Tank supports in satisfactory condition?				
2.4 Is water able to drain away from the tank?				
2.5 Evidence of the tank coating cracking, crazing, peeling, or blistering?				
3. Cathodic Protection				
3.1 CP system functional?				
3.2 Rectifier reading: (if applicable)				
4. Tank Shell/Heads				
4.1 Noticeable shell/head distortions, buckling, denting, or bulging?				
4.2 Evidence of shell/head corrosion or cracking?				

	Y*	N	N/A	DESCRIPTION & COMMENTS
5. Tank Roof Satisfactory?				
5.1 Standing water on roof?				
5.2 Holes in roof?				
5.3 Evidence of the roof coating cracking, crazing, peeling, or blistering?				
6. Tank Venting Satisfactory?				
6.1 Vents free of obstructions?				
6.2 Emergency vent operable? Lift as required?				
7. Insulated Tanks				
7.1 Tank insulation missing?				
7.2 Are there noticeable areas of moisture on the insulation?				
7.3 Mold on insulation?				
7.4 Insulation exhibiting damage?				
7.5 Is the insulation sufficiently protected from water intrusion?				
8. Leak Detection				
8.1 Visible signs of leakage around the tank, concrete, pad, containment, ringwall, or ground?				
9. Tank Attachments and Appurtenances				
9.1 Ladder and platform structure secure with no sign of severe corrosion or damage?				
9.2 Check all tank openings are properly sealed				
9.3 Piping connections, piping, and valves in good condition?				
9.4 Flanged connection bolts tight and fully engaged with no sign of wear or corrosion?				
10. Tank Level & Overfill Protection				
10.1 Tank liquid level gauge readable and in good condition?				
10.2 Tank overflow protection satisfactory?				
10.3 Has the tank liquid level sensing device been tested to ensure proper operation?				
10.4 Are overfill protection devices in proper working condition?				

	Y*	N	N/A	DESCRIPTION & COMMENTS
11. Tank Electrical Equipment				
11.1 Grounding strap secured to the tank and the ground and in good condition?				
11.2 Is electrical wiring for control boxes/lights in good condition?				
12. Other Conditions				
12.1 Are there other conditions that should be addressed for continued safe operation or that may affect the SPCC?				
12.2 Identification labels and tags secure, intact, and readable?				
LOADING/UNLOADING AND TRANSFER EQUIPMENT				
Loading/unloading rack is damaged or deteriorated				
Connections are not capped or blank-flanged				
Rollover berm is damaged or stained				
Berm drainage valve is open or is not locked				
Drip pans have accumulated oil or are leaking				
SECURITY				
Fencing, gates, or lighting are non-functional				
Alarm system is not available and/or operational				
Pumps and valves are not locked (not in use)				
SPILL RESPONSE EQUIPMENT				
Spill kit inventory is incomplete				

NOTE: See the Inspection Coversheet for explanation of how to complete this checklist.

Inspector Printed Name: _____ **Inspector Signature:** _____

J.C. Boyle Facility (Klamath County, OR)

Monthly Inspection - Notes and Remarks (page ____ of ____)

This page is intended as a place to summarize all discrepancies found for all of the tanks inspected, as well as additional room to elaborate on *Description & Comments* from the Monthly Inspection Form (or equivalent KieTrac form). For each tank with at least one discrepancy: Add the Tank ID number, tank type, location, and Responsible Person and a description of the findings. Note: All SPCC inspections are uploaded to KieTrac.

Tank ID, Type, Location, Responsible Person, Findings

Appendix J

Supplied Tank Information

226
1 OGA CONTAINMENT PAN
38" HIGH

18" GRIP STRUT WALKWAY — SEE SHEET 2

1 OGA STEPS W/ TRACTION TREAD
8" RISE PER TREAD

TOP SHARP
EDGES W/
3/8" CF ROUND

8' LIGHT OVER TANK

**DRIP TRAY W/ WIGGINS
NOZZLE HOLDER**
REEL STAND— SEE SHEET 3
MOUNT FILTERS TO STAND

3000 PAL ACE TANK

1.5" GRACO AOD PUMP
MOUNT— SEE SHEET 3

4' LIGHT OVER REELS AND PUMP

ELECTRICAL
SERVICE PANEL

12" EXHAUST FAN
ADJUST LOCATION TO FMT
CORRELATION AS NEEDED

72
1. CONTAINMENT PAN
VOLUME 3300 GALLONS

**BULK FUEL STORAGE
CONTAINER — LAYOUT**

NOTES:

SCALE

DWN: RYAN WAFER

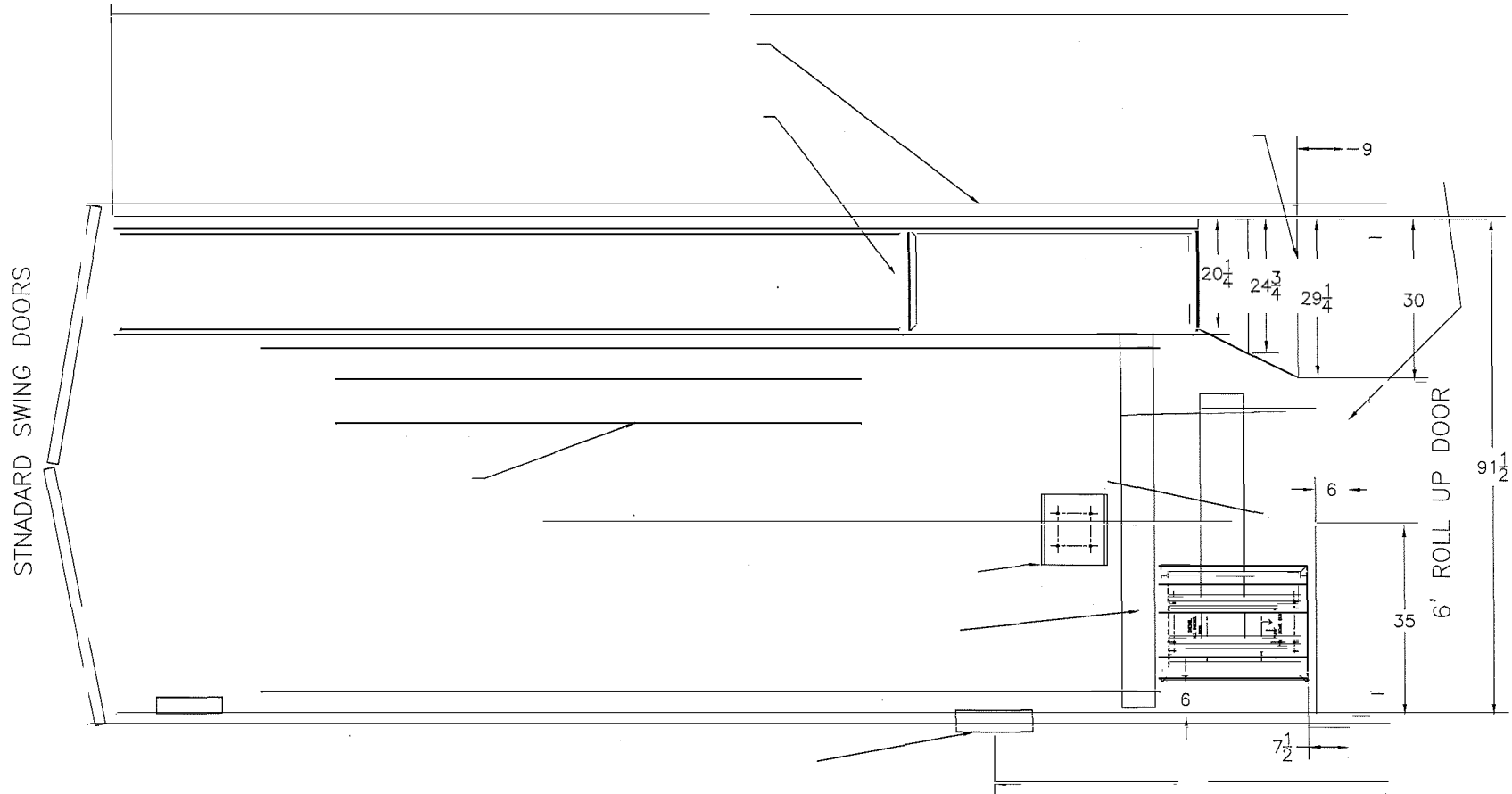
COLUMBIA SHOP
13000 NE WHITAKER WAY

*ORTLAND, OR 97220
(503) 256-5541

SIZE: FSCM N O.
A

DWG NO.

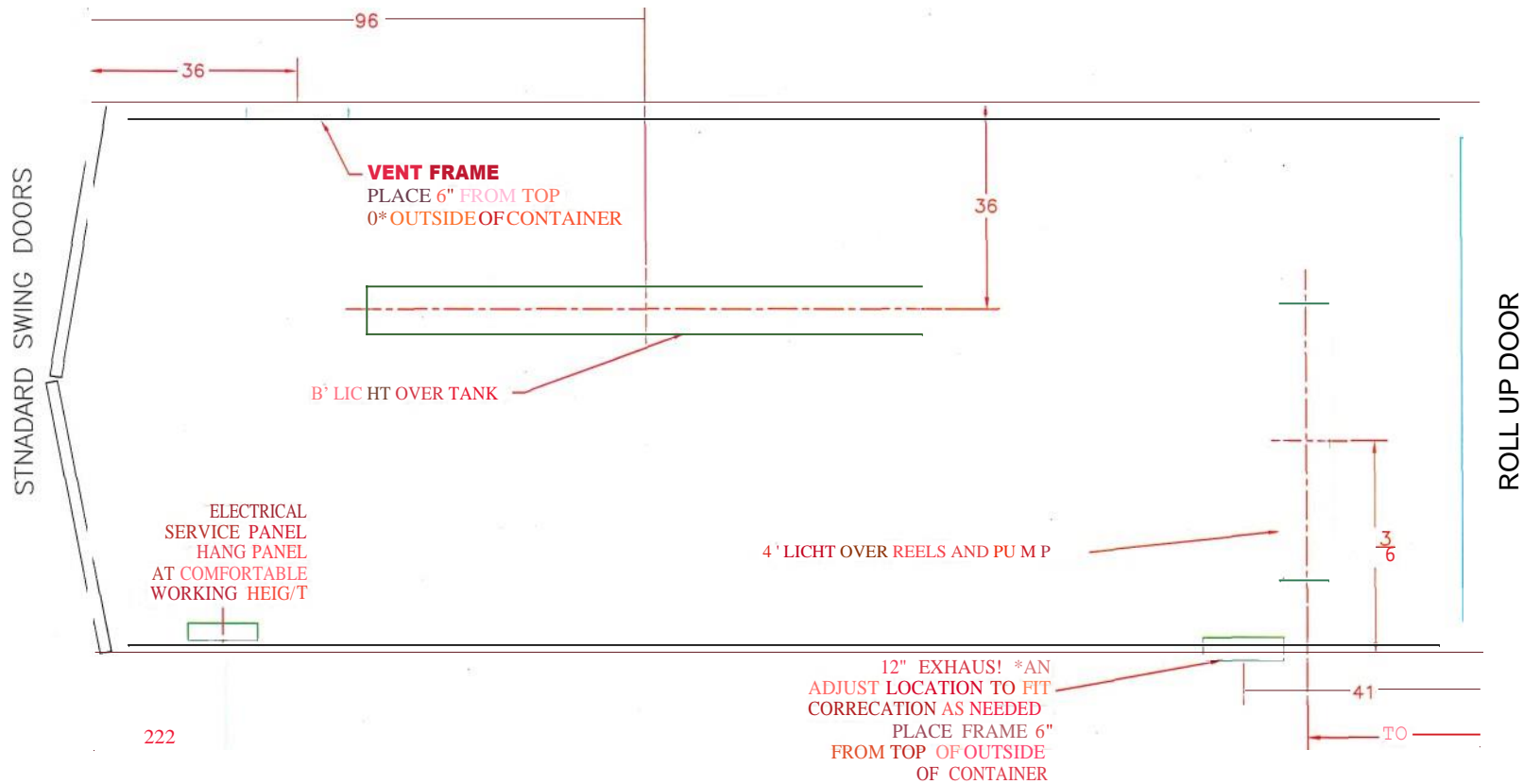
REV



SCALE

DWN: RYAN WAFER

SHEET 1/



NOTES : **WELD ON FLAT BAR PLATES TO ROOF AND WALLS TO MOUNT**

LIGHTS & PANEL AS SHOWN

KIEVIT INFRASTRUCTURE WEST CO.

5000 GAL FUEL CONTAINER
ELECTRICAL COMPONENTS

COLUMBIA SHOP
13000 NE WHITAKER WAY
PORTLAND, OR 97230
(503) 256-5541

SIZE FSCU NO.
SCALE

DWN: RYAN WAFER

SHEET 4

A

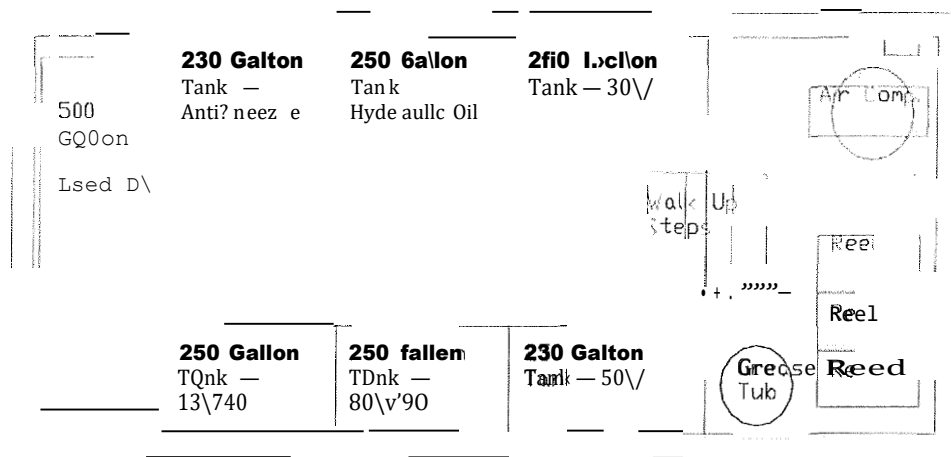
DWG NO.

REV
0

SCALE

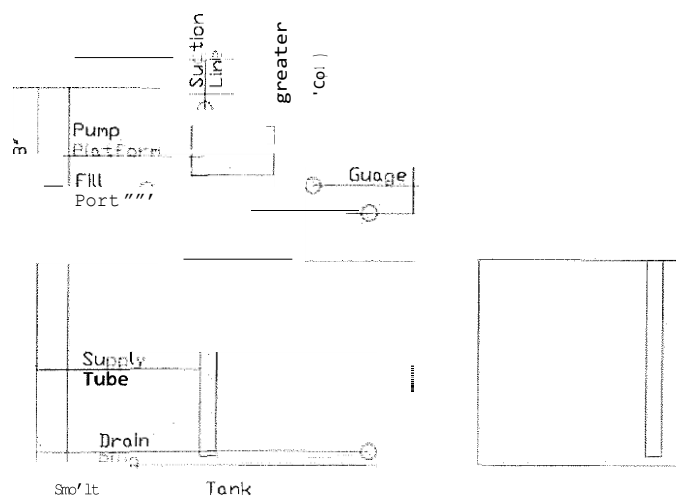
DWN: RYAN WAFER

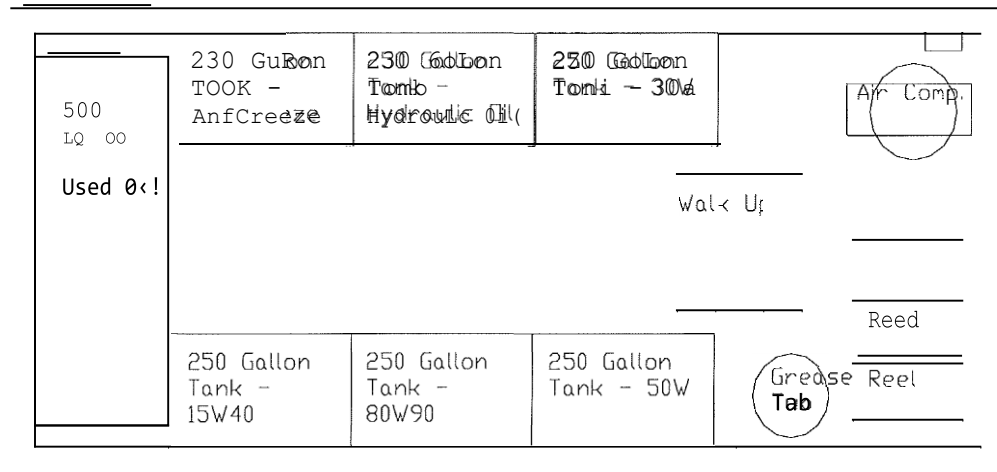
SHEET 4



8' x 20' Connex box Layout

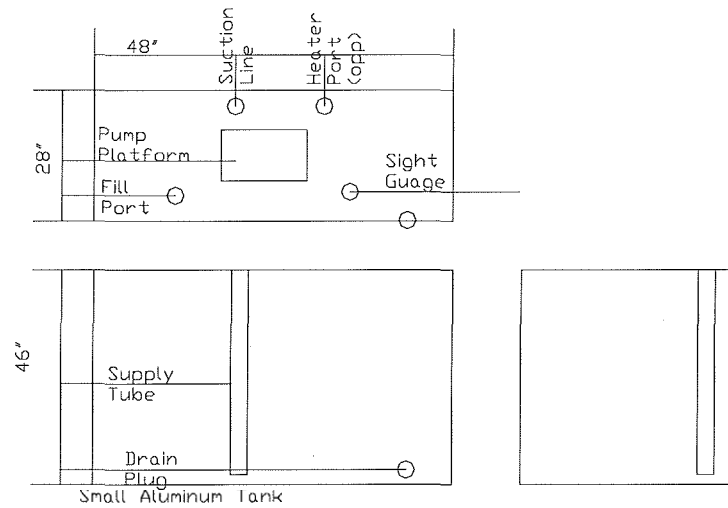
Above is the layout for an 8' x 20' Connex box. Below is the layout for the small aluminum tank and on the next page is the large aluminum tank.

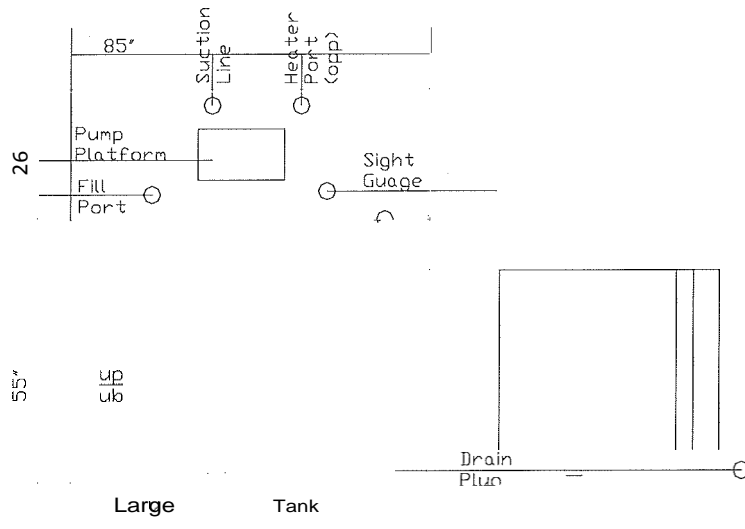


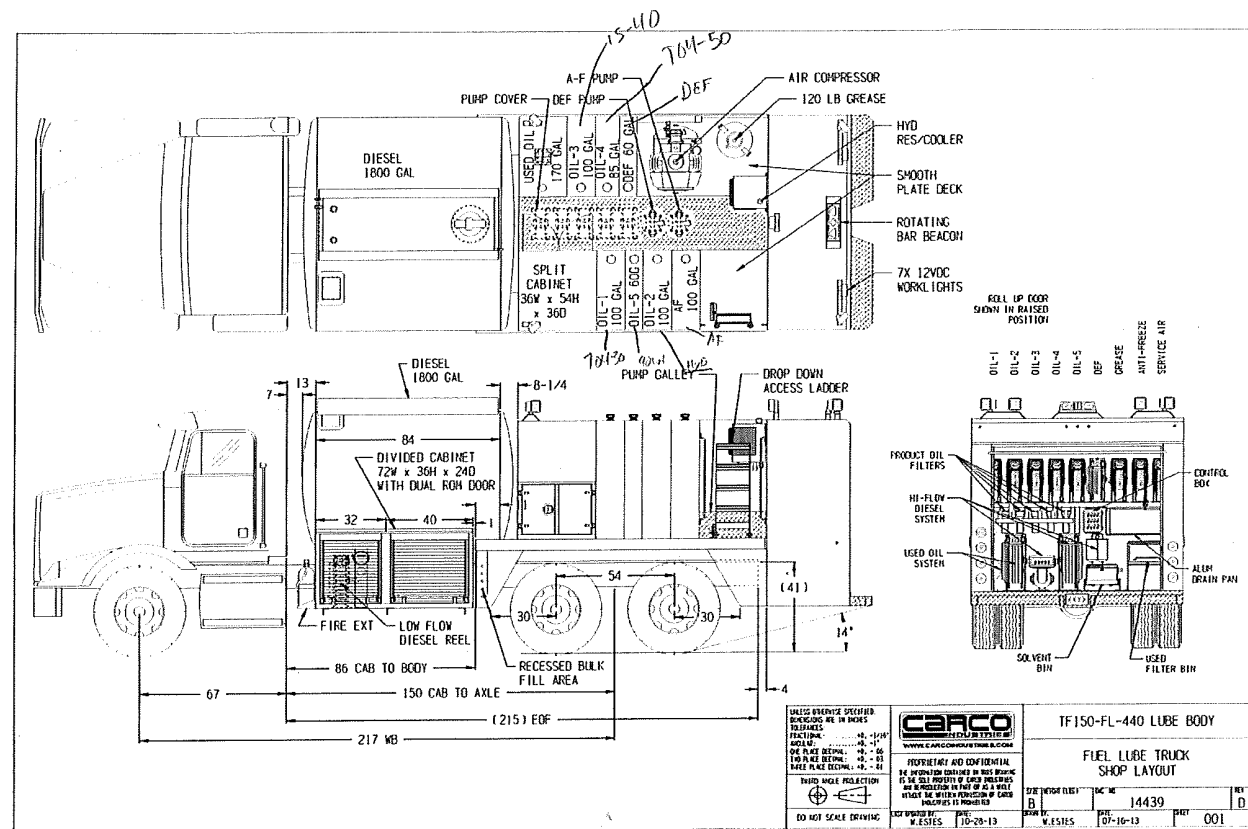


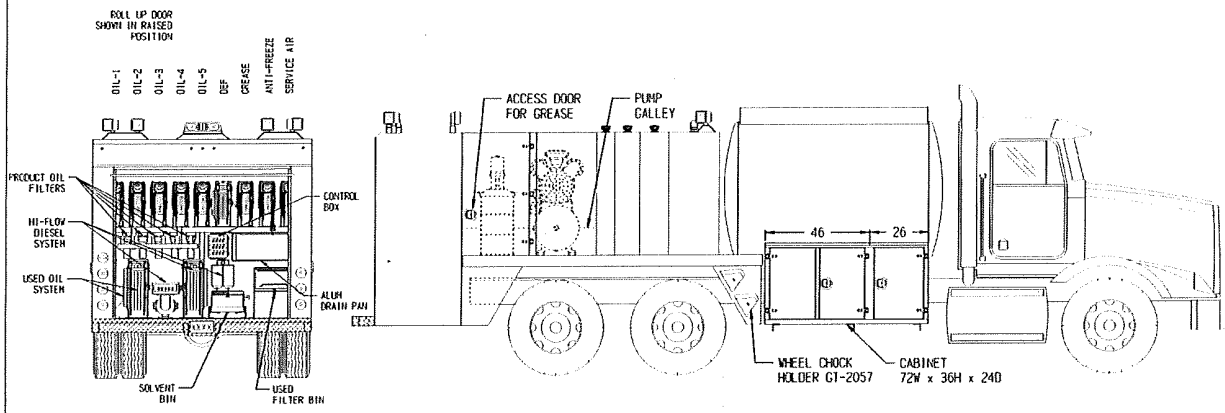
8' x 20' Conex basic Layout

Above is the layout for an 8' x 20' Conex box. Below is the layout for the small aluminum tank and on the next page is the large aluminum tank.





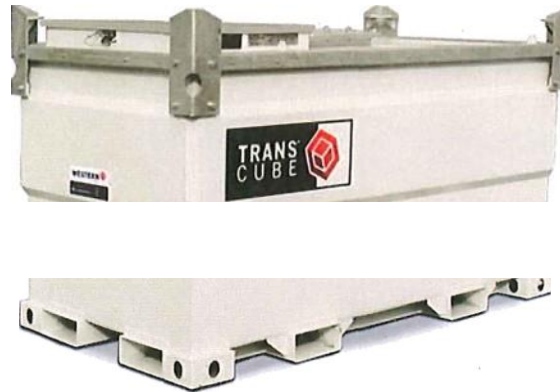




<p>UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES</p> <p>TOLERANCES: FRACTIONS: .0005 - .125 DECIMALS: .0005 - .125 HOLE PLATE THICKNESS: .005 - .125 HOLE PLATE BORE: .005 - .125 HOLE PLATE BORE: .005 - .125 HOLE PLATE BORE: .005 - .125</p> <p>WELD ANGLE PROTECTION:  </p> <p>DO NOT SCALE DRAWING</p>	<p>CARCO EQUIPMENT TRUCKS</p> <p>PROPERTY AND CONFIDENTIAL ALL INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF CARCO EQUIPMENT TRUCKS. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF CARCO EQUIPMENT TRUCKS.</p> <p>DESIGNED BY: V.ESTES DATE: 10-24-13 CHECKED BY: V.ESTES DATE: 10-24-13</p>	<p>TF150-FL-440 LUBE BODY</p> <p>FUEL LUBE TRUCK SHOP LAYOUT</p> <p>SIZE: 1/4" X 11" (11" X 14") SCALE: 1/4" = 1'-0" DATE: 07-16-13 PART: 002</p>
---	---	---

Copyright © 2013 CARCO EQUIPMENT TRUCKS. All rights reserved. CARCO EQUIPMENT TRUCKS, 400-888-8888

SPECIFICATION DATA SHEET I MODEL : 20TCG



The TRANSCUBE[™] 20TCG is a multi—task on-site fuel deployment solution for the direct supply to stationary diesel engines or the refueling of equipment on demand .

- ❖ **Transportable.** Full load lifting eyes, forklift pockets and internal baffles designed to allow handling of the tank full of fuel .
- ❖ **Stackable.** Easily stackable (2)-high full of fuel and (4)-high empty to reduce storage space requirements.
- ❖ **Accessible.** Access manway for maintenance and inspection of inner tank. Removable inner tank for servicing and cleaning.
- ❖ **Efficient.** Lockable equipment cabinet locks and secures equipment and fuel ports to run up to 3 pieces of diesel-powered equipment.
- ❖ **Environmentally Safe.** Double-walled, 1 7 0% containment eliminates the need for spill pans, U L 142 approved.

SPECIFICATIONS *

STANDARD FITTINGS: High accuracy contents gauge; 3"Fill Point; 2" fusible link fill port; 1" pump feed with flexible dip pipe, strainer & non-return valve; (1) engine feed and return port set; pressure/vacuum vent; breather vent.
OPTIONAL FITTINGS: Complete transfer pump kits; water & particulate filter kits; fuel up to (2) feed & return blocks; fuel hose & quick couplers.

Capacity (Brim-Fill) Litres: 2091	Dimension Height (mm/in): 1319 mm/51. 91"
Capacity (Brim-Fill) Imperial Gallons: 460	Weight Empty (lbs/kg): 1815 lbs (823kg)
Capacity (Brim-Fill) US Gallons: 552	Weight Full (lbs/kg): 6424 lbs (2914kg)
Dimension Length (mm/in): 2292 mm/90.24"	Approvals: U L142, ULC S—60 1-07, SUN I BC Type 3 IA,
Dimension Width (mm/in): 1140 mm/44.88"	U N DOT, NFPA, Transport Canada, Vlare, Kiwa

*Model specifications may slightly differ based on stock availability in your area. Please contact your local representative to confirm tank specifications.



W W W . W E S T E R N - G L O B A L . C O M

AUSTRALIA CANADA ITALY SOUTH AFRICA UNITED KINGDOM UNITED STATES

Appendix E

Consultation Record

Consultation Record

Waste Disposal and Hazardous Materials Management Plan			
Sub-Plan	Agency	Date of Agency Plan Submittal	Agency Comments Received Date
Oregon Spill Prevention, Control, and Countermeasure Plan	Oregon Department of Environmental Quality	January 26, 2021	No Comments Received
	Oregon Department of Fish and Wildlife	January 26, 2021	No Comments Received
Oregon Waste Disposal and Hazardous Materials Management Plan	Oregon Department of Environmental Quality	January 26, 2021 August 2, 2021 August 23, 2022	February 10, 2021 August 16, 2021 & September 7, 2021 October 14, 2022 (DEQ Conditional Approval)
	Oregon Department of Fish and Wildlife	January 26, 2021 August 2, 2021	No Comments Received No Comments Received
	Bureau of Land Management – Klamath Falls	February 12, 2021 August 2, 2021	April 15, 2021 No Comments Received
California Waste Disposal Plan	California State Water Resource Control Board	January 26, 2021 August 2, 2021 July 7, 2022	February 11, 2021 No Comments Received September 20 & 27, 2022
	North Coast Regional Water Quality Control Board	January 26, 2021 August 2, 2021	No Comments Received No Comments Received
	California Department of Fish and Wildlife	January 26, 2021 August 2, 2021	February 9, 2021 August 16, 2021
	California Department of Water Resources	January 26, 2021 August 2, 2021	No Comments Received No Comments Received
California Hazardous Materials Management Plan	California State Water Resources Control Board	January 26, 2021 August 2, 2021 July 7, 2022	February 11, 2021 September 7, 2021 September 20, 2022
	California Department of Fish and Wildlife	January 26, 2021 August 2, 2021	February 9, 2021 August 16, 2021

Waste Disposal and Hazardous Materials Management Plan			
Sub-Plan	Agency	Date of Agency Plan Submittal	Agency Comments Received Date
	California Department of Water Resources	January 26, 2021 August 2, 2021	No Comments Received No Comments Received